

Completion Report  
(Date of Sanction to Date of Completion)

**Department of Biotechnology**

**Proforma for submission of Completion Report supported under Star College Scheme**

1. Name of the College: PDEA'S Waghire College Arts, Commerce and Science, Saswad.
2. Name of Coordinator, designation: Dr. Vidya Vivek Ptatankar  
Address, Phone nos. Assistant Professor  
Department of Botany,  
Waghire College Saswad  
Mob. No. +91 7387140511
3. (A) Assessment duration: 24/08/2020 to 23/08/2023 (B) Duration in years: 3
4. Details of Departments Supported

Sr. No	Name of Department	Courses (B.Sc./M.Sc./PG Diploma, certificate etc) offered	Regular Faculty members		
			Total = 29		
			With Ph.D.	Without Ph.D.	Total
1.	Chemistry	BSc, MSc	5	6	11
2.	Microbiology	BSc, MSc	3	6	9
3.	Botany	BSc	3	3	6
4.	Zoology	BSc	2	1	3

5. **Number & Date of Advisory committee meeting held: - 13**

**Dates of meeting:** 18/09/2020, 28 /09/2021, 06 /02/2022, 17 /02/2022, 1/4/ 2022 and 11/04/2022, 23/08/2022, 31/10/2022, 10.11.2022 (Advisory meeting with DBT), 8/03/2023, 15/05/2023, 1/11/2023. Department heads are also conducting meetings for the department after all these meeting to plan and for implementations.

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

**DEPARTMENT OF MICROBIOLOGY:**

Under the auspices of the DBT Star College Scheme and through collaborative efforts outlined in the Memorandum of Understanding (MoU), the Department of Microbiology undertook various initiatives to enhance the educational experience of T. Y. B. Sc. students and promote scientific awareness within the community.

1. **Field Activity on Bioinoculants:** As part of the DBT Star College Scheme, the department organized a field activity for T. Y. B. Sc. students. The focus was on assessing the efficacy of Bioinoculants in comparison to chemical fertilizers. The students' results were not only highly encouraging but also played a pivotal role in creating awareness among nearby villagers about the beneficial role of bioinoculants.

2. **Training Program in Collaboration with Make Intern and E-Cell IT Kharagpur:** The Microbiology department conducted a two-day training program for T.Y.B.Sc. students in collaboration with Make Intern and E-Cell IT Kharagpur. The program aimed to provide hands-on experience in chromatographic and molecular biology techniques, aligning with the theoretical concepts covered in their courses. Additionally, 4-5 students identified during the training were selected to participate in the final championship at IIT Kharagpur.
3. **Session on Basic Techniques in Molecular Biology:** Renowned mentor Dr. Chinmoy Patra, a Scientist from Aagharkar Research Institute, Pune, conducted a session during the training program. He introduced students to various laboratory animals used for testing purposes and highlighted the significance of Zebrafish as a model organism due to its simple anatomical structure.
4. **Training on Isolation and Enumeration of Bacteriophages:** Another significant training program for T.Y.B.Sc. students focused on the isolation and enumeration of Bacteriophages. Dr. Sangita Ahiwale, a notable figure in the field, provided a comprehensive lecture on Bacteriophages, emphasizing their potential to replace antibiotics in treating bacterial infections caused by antibiotic-resistant organisms. The session included hands-on training in isolating bacteriophages from sewage water.
5. **Interactive Session on Scientific Writing and Communications:** In a bid to instil a research-oriented mindset among undergraduate students, the Microbiology department organized an interactive session on 'Scientific Writing and Communications: Papers, Proposals, and Presentations' under the DBT Star Scheme. Dr. Sheetal Shevate elucidated the application of principles for scientific writing, focusing on research papers, review articles, and grant proposals.

#### **DEPARTMENT OF CHEMISTRY:**

Under the DBT Star College Scheme, the Department of Chemistry organized various enriching activities. An online workshop on Laboratory Safety aimed at creating awareness among students, faculty, and non-teaching staff involved 93 B.Sc. students, 7 faculty members, and 4 non-teaching staff. Guest lectures on Gravimetric analysis and General Introduction to spectroscopy were conducted, featuring eminent speakers like Professor Dr. K. M. Gadhav and Dr. Satyanarayana Sirsani. The department also organized a workshop on Soap and Detergent Making, with 52 students actively participating.

A seven-day online Faculty Development Programme (FDP) on Characterization Techniques in Chemical and Biological sciences was held in collaboration with HRDC, Savitribai Phule Pune University, engaging 43 teachers from various colleges. Additional activities included a guest lecture on Career Opportunities in Pharmaceuticals, an Industrial Visit to Someshwar Sahakari Sakhar Karkhana Ltd, and a workshop on UV-Visible Spectroscopy, with Dr. Ganesh Nigade as the resource person.

The department initiated eight Minor Research Projects (MRP) to cultivate a research-oriented mindset among T Y B Sc students, fostering a better understanding of concepts and applications.

Sr. No.	Title of the projects	Name of Students	Year	Class
1	Calcium Oxide (CaO) derived from Waste Egg's Cells: An Efficient and Ecofriendly catalyst for	CHACHAR	2021-2022	T Y B Sc Chemistry

	synthesis of 5-aryledene Barbituric acid derivatives.	AMIT MOHAN		
2	Synthesis of 5-aryledene malanonitrile derivatives using calcium oxide (CaO) derived from waste Egg's Cells: An efficient and Green catalys.	JAGTAP ANITA RAJENDRA	2021-2022	T Y B Sc Chemistry
3	Synthesis of terahydrobenzo[b]pyran derivatives using nickel ferrite (NiFe <sub>2</sub> O <sub>4</sub> )catalyst	KAMTHE VAIBHAVI ANIL	2021-2022	T Y B Sc Chemistry
4	Synthesis of 2-amino3-cynopyridenes derivatives using Magnetically separable Nickel Ferrite catalyst	YADAV PRITI RAVINDRA	2021-2022	T Y B Sc Chemistry

The Department of Chemistry conducted hands-on training programs to enhance the practical skills of T Y B Sc students. A training session for 55 students focused on water and soil parameter analysis, covering Conductivity, pH, TDS, and more. Additionally, a hands-on training workshop on Nanoparticle Synthesis aimed to generate interest in biogenic synthesis among T Y B Sc students. Dr. Ashok Bankar, an esteemed expert in the field from Abasaheb Garware College, Pune, was invited. His demonstration showcased the quick synthesis of Ag and Au nanoparticles using plant leaf sources, allowing students to observe the visual color change during the nanoparticle formation process. These hands-on initiatives contribute to a comprehensive learning experience for students, bridging theoretical knowledge with practical applications in the field of chemistry. These activities collectively contribute to the holistic development and academic enrichment of students and faculty.

#### **DEPARTMENT OF BOTANY:**

##### **1. Research-Centric Approach through Workshops and minor research project:**

The department has actively promoted a research-centric mindset among UG students through targeted workshops. These workshops cover diverse topics such as Mushroom cultivation, Aerobiological techniques, chromatography techniques, and Molecular techniques. By offering insights into these specialized areas, students are encouraged to explore research opportunities and deepen their understanding of scientific methodologies. On the basis of these we have assigned minor research projects to students on various topics such as Plant diversity of their localities/Villages, Wild Flower diversity survey report, Isolation fungi from nail samples, *Spirulina* and chocolate production, Seed germplasm collection and conservation, Plant diversity study of various localities, Palynological study, aerobiological survey of college and different localities, Carbon accounting of College Campus (WCS) for Carbon Neutral Campus, anatomy of *Capparis*. Out of that Chocolate production from *Spirulina* and Allelopathic effects and rhizosphere microbial consortia of *Cassia* sp. and biological control of *Parthenium* selected for AVISHKAR competition at till zonal level organised by SPPU. Osmania University organised national conference, Best paper presentation award received by faculty for oral presentation on Anatomy of *Capparis* sp. from Purandar.

##### **2. Enhanced Practical Skills through New Equipment:**

The acquisition of new equipment under the DBT-STAR College Scheme has significantly benefited

students (UG), particularly in the fields of Biochemistry and Biotechnology. These modern tools and apparatus provide students with valuable hands-on experience, elevating their practical skills and enriching their understanding of these disciplines, Micropropagation of Medicinally important plants. Spawn preparation, sterilization, Inoculation, Incubation, Harvesting, Packaging and Marketing of mushroom, Palynological studies of college campus DNA, RNA and Protein Isolation and separation of isolated DNA by Agarose Gel Electrophoresis and PAGE, Herbarium techniques and E-herbaria.

### **3. Interactive Learning with Smart Boards:**

The implementation of smart interactive boards, made possible through the DBT-STAR Scheme, has transformed the teaching, and learning experiences in pandemic 2020-21 and in present time. Both educators and students leverage these advanced tools for interactive audio-visual sessions, fostering dynamic exchanges of information and knowledge. This integration of technology enhances the academic curriculum and promotes a more engaging educational environment.

### **4. Skill development program:** we also focused on organization of more skill-based development programs. We organized Flower arrangement programs, Science exhibition, Soap and detergent making workshop, PTC hands-on workshop, Mushroom cultivation, Chromatographic techniques workshop, Molecular techniques workshop etc.

A noteworthy outcome of departmental efforts is the notable rise in student involvement in academic, research and extracurricular activities. The encouragement and facilitation of participation in training programs, conferences, research projects, and various competitions have not only diversified students' experiences but have also contributed to a more holistic development of their skills and interests beyond the academic realm.

### **DEPARTMENT OF ZOOLOGY:**

As part of the DBT STAR College Scheme, the Zoology department is proud to highlight two noteworthy projects undertaken by three dedicated students, contributing significantly to scientific exploration and biodiversity awareness.

1. The first project, "**Faunal Diversity of Bopgaon Village, Purandar Tehsil, Pune,**" conducted by Ms. Aditi Madhukar Phadtare and Ms. Aditi Sunil Phadtare, showcased the rich biodiversity of Bopgaon village. Over one month (10/01/2023 to 10/02/2023), the students meticulously documented 28 bird species, 11 mammal species, 1 amphibian, 1 reptile, and various insect species. Notably, the observation of the Common Stonechat's migratory behaviour during winter months was particularly significant. The project categorized all observed species according to IUCN classifications and WPA schedules, providing valuable insights into the local ecosystem. This initiative also serves as a foundation for creating a People Biodiversity Register in Bopgaon village.
2. The second project, "**Ant Diversity in College Campus,**" led by Ms. Sakshi Sudam Kapare, marked the first-ever study on ant diversity in the college campus. Ms. Kapare identified and observed six ant species, contributing to the understanding of Hymenoptera order dynamics. Despite the short duration and limited equipment use, this pioneering study not only added to the scientific knowledge base but

also ignited a passion for research among students.

While these projects were conducted with constraints in duration and resources, they served as catalysts for fostering a scientific temperament among students. The initiation of small-scale projects reflects a major achievement for the Zoology department, especially considering the subject's subsidiary nature at the S.Y. B.Sc. level. This endeavour has successfully cultivated an interest in scientific exploration and research, showcasing the department's commitment to nurturing inquisitive minds in the current educational landscape.

These efforts collectively showcase the department's commitment to holistic education, practical skill development, and the promotion of scientific knowledge both within the academic realm and the wider community which is supported by DBT STAR College scheme.

#### **7. Any Novel aspect introduced during the Scheme duration.**

In response to the changing educational landscape, our science faculty actively engaged in diverse training programs, covering online tools, blended learning methodologies, and various initiatives organized by our institution and others. This commitment reflects our dedication to staying current with educational advancements.

**DEPARTMENT OF MICROBIOLOGY:** Thanks to the Star College scheme, we were able to facilitate numerous workshops catering not only to students but also to our dedicated staff members. One particularly impactful session was the 'Mind Power and Stress Management Workshop' led by Mr. Datta Kohinkar, serving as a genuine stress-relieving activity. This experience underscored the consistent need for such workshops to regularly uplift the work potential of our staff.

A noteworthy field activity targeted specifically at students hailing from rural areas proved to be a remarkable experience. Over the years, their families had been relying on chemical fertilizers, leading to issues such as soil texture degradation, increased pest problems, among others. However, the introduction of bioinoculants resulted in a significant reduction in pest levels on vegetables, improvement in soil texture, and an overall enhancement in crop yield. This hands-on learning experience has effectively encouraged them to comprehend the detrimental effects of chemicals on soil fertility.

**DEPARTMENT OF BOTANY:** A historic milestone was reached as we launched the Faculty Development program in collaboration with UGC-HRDC. FDP were focusing on interdisciplinary studies and Chemical Science subjects, supported by the Star DBT Scheme.

The Seed Germplasm Bank Initiative was launched to document and conserve local plant resources vital for humanity.

An extensive project is assigned to BSc first-year students, spanning three years, with continuous mentoring throughout. The students' impactful work is subsequently published in prestigious journals, and they are provided with guidance throughout the patenting process for their contributions.

Conducted skill-based training programs within our subject area aimed at fostering employability and promoting entrepreneurship among students. For instance, in the field of Botany, the department organized training sessions covering flower arrangements, horticulture techniques, mushroom cultivation, algae

cultivation, bonsai techniques, etc. These programs focused on imparting skills essential for establishing small-scale industries or businesses.

**DEPARTMENT OF ZOOLOGY:** Although the activities proposed in the objectives given during the grant proposal was mainly focused on apiculture, we carried out several other small-scale activities in addition to the main apiculture. Following are some novel aspects as per Zoology department-

1. Through the hands-on training on Honeybee handling to the nearby local farmers, students and faculty, which itself serves as a skill development program for students, the students and others fear regarding the honeybee stinging and handling was reduced.
2. Virtual museum created through video shooting of preserved specimens was also a one of its type in the institution all colleges. Students can excess the specimens whenever they want and observe and study them at home. At the same time, the specimens remain preserved virtually in spite of any physical damage occurring to it.
3. Purchased Apiary instruments and bee boxes were utilized during Apiculture practicals for better understanding of students, So the concept was clearer with visual mode than just theoretical audio mode of teaching. Performance of students was increased in Zoology Paper –II (Applied Zoology-II) in academic year 2022-2023 as compared to the performance in academic year 2021-2022.
4. Smart board purchased from the grant also helped in enhanced understanding of the subject to the student through the viewing of educational videos related to practical and theory.
5. Health awareness, guidance, and checkup workshop for teaching and non- teaching college staff, created an awareness of health issues, preventive measures and treatment to be taken by each individual during the corona pandemic.
6. Through the online Vermicomposting workshop, an alternate method for sustainable agriculture was introduced to the students as majority of the students are from agricultural background. By learning the basics of vermicomposting through the online workshop, they can in an own manner carry it out in their fields and use vermicomposting as a self -employment source.
7. Through the guest lecture series organized during October 2021 and February 2022, the students were exposed to the plethora of different aspects of wildlife, its protection and conservation and to the different fields and career prospects in zoology which they were unaware off.
8. A Butterfly Garden cum small scale apiary which was earlier set up from the grants received from DBT-STAR College Scheme is an innovative idea which can be used for generating income to college by inviting nearby schools to visit the butterfly garden and apiary.
9. Through the wildlife photography lecture, the students were made aware of how patience, perseverance and photography can give an insight of the animal behavior and their adaptability in response to the anthropogenic activities degrading their natural habitat.
10. MOUs were signed by the Zoology department for the first time with MAESA institute and Paul Hebert Centre of DNA Barcoding and Biodiversity studies, Aurangabad, which has provided an insight

to the students regarding the different aspects in biodiversity but also in the different interdisciplinary research techniques.

11. Diversity of ants in the college campus was observed for the first time through the student project.
12. Research based approach was carried out by any zoology student for the first time.
13. Initiation of People's Biodiversity Register (PBR) through participation of students in observation of faunal diversity through the baby step taken by Zoology students.
14. Concept taught at Third Year Zoology was introduced to first year students through the extra practicals. These gave an insight to the students regarding the different instruments usually used in any life science lab as they do not have such practicals in FYBSc Syllabus. Also, certain aspects related to taxonomy of insects and egg types were also useful for future understanding in Zoology subjects.
15. Instruments purchased through DBT grant were acquainted to first year students through extra practical.
16. The instruments purchased can be utilized for T.Y.B.Sc Zoology whenever it is started in college.

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

The introduction of the DBT-STAR Scheme in our college coincided with the onset of the Covid-19 pandemic and subsequent lockdown, presenting challenges and disruptions to planned activities. Despite the constraints, the department adapted by organizing online webinars and guest lectures, although skill development workshops and training programs faced restrictions due to offline limitations.

The Traveling Grant, encompassing activities such as Botanical Excursions, Industrial visits, and Field visits, initially faced obstacles due to the pandemic. However, as conditions improved post-Covid-19, efforts were made to complete these activities.

The Covid-19 period posed hurdles for students' summer training programs and projects, primarily due to unavailability of laboratory facilities. Valuable lessons were learned during this time, emphasizing the significance of providing additional knowledge and skills alongside regular teaching. This was exemplified through the provision of smart boards, the establishment of an apiary, and visits to an Apiculture unit, enhancing students' performance.

Amidst the challenges, several difficulties were encountered. Post-pandemic, instilling a scientific temperament in B.Sc students proved strenuous, as many lacked basic science knowledge and were focused on passing rather than acquiring deeper subject understanding. Motivating students who were disengaged from regular classes posed a crucial question. The lack of stringent actions at higher levels by college authorities left teachers and HODs helpless. Additionally, since Zoology is a subsidiary subject up to S.Y.B. Sc level, the interest in carrying out projects in Zoology was limited, resulting in only two projects being undertaken.

The pandemic underscored the importance of not underestimating even the smallest living creatures,

prompting a shift to online teaching, and learning modes. Challenges persisted, with students facing issues related to geographical conditions during online sessions. Despite these obstacles, efforts were made to organize online visits, such as to a Blood Bank, providing students with insights into its operations.

Over the subsequent two to three years post-pandemic, the department gradually returned to routine, successfully arranging most of the planned training sessions and hands-on activities for both students and staff members as outlined in the initial proposal.

**7. Key performance indicators:**

<b>Microbiology</b>																		
S. no	Indicator	Pre-support								During /After Support								Remarks
1	No. of students admitted	<b>2019-20:</b> F.Y.B.Sc.= 130 S.Y.B.Sc.= 119 T.Y.B.Sc.= 60  <b>T.Y.B.Sc.= 60</b>								<b>2020-21:</b> F.Y.B.Sc.= 119 S.Y.B.Sc.= 107 T.Y.B.Sc.= 69 <b>2021-22:</b> F.Y.B.Sc.=110 S.Y.B.Sc.=79 T.Y.B.Sc.=75 <b>2022-23:</b> F.Y.B.Sc.=70 S.Y.B.Sc.=88 T.Y.B.Sc.= 54  <b>T.Y.B.Sc.= 54</b>								
		<b>M=20</b>				<b>F=40</b>				<b>M=23</b>				<b>F=31</b>				
		SC	NT	OBC	G	SC	NT	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	
		01	00	04	16	00	02	07	30	00	02	7	14	01	01	07	22	
2	Admission cut-off %	45%								50%								
3	No. of students passing out (%) [Students Admitted/passing out (pass %)]	55%								60%								
4	Drop-out rates	Nil								Nil								
5	No. of students opting for MSc / M.Tech/ PG Diploma in Science	2019-20=15								2020-21=32 2021-22=19 2022-23=16								
6	Average marks	52%								55%								
7	No. of hands-on experiments being conducted	Nil								04								
8	No. of new experiments introduced	Nil								02/course								
9	Publications (scopus indexed) /patents, if any.	Nil								03								
10	Training received by (A) Faculty (B) Students (Summer/ Winter Projects)	Nil								01(Mind Power training and Stress management)  02								
11	Exhibitions/seminars /training courses conducted	1/1/0								3/8/3								
12	Books/journals subscribed from grants	Nil								Nil								



13	Outreach activities (Popular lectures)	01	04
14	Colleges mentored to apply for DBT Star College grants	Nil	02 Annasaheb Magar College, Hadapsar, Pune Annasaheb Waghire College, Otur during application for the scheme
15	Invited lectures	02	12 + 6

Chemistry																	
S. no	Indicator	Pre-support (2021-2022)							During /After Support (2022-2023)							Remarks	
1	No. of students admitted	<b>Total = 72 (T.Y. B.Sc.)</b>							<b>Total = 51 (T.Y. B.Sc.)</b>								
		<b>M = 47</b>			<b>F = 25</b>				<b>M = 20</b>				<b>F = 31</b>				
		SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	
2	Admission cut-off %	-							-								
3	No. of students passing out (%) [Students Admitted/passing out (pass %)]	66.66 % 72 students admitted 48 students passed out (66.66 %)							60.78% 51 students admitted 31 students passed out (60.78%)								
4	Drop-out rates	-							-								
5	No. of students opting for MSc / M.Tech/ PG Diploma in Science	19							12								
6	Average marks	First class							First class								
7	No. of hands-on experiments being conducted								03								
8	No. of new experiments introduced								08								
9	Publications (scopus Indexed) /patents, if any.	03							10 publications and 01 patents								
10	Training received by (C) Faculty (D) Students (Summer/ Winter Projects)	(B) 02							A) 1 FDP B) 12 MRP								
11	Exhibitions/seminars /training courses conducted								01 laboratory safety 03 - hands on training workshop on Soap and detergent making , UV –Visible spectroscopy, nanoparticle synthesis								
12	Books/journals subscribed from grants	02							01 (Urasian Chemical Communications)								
13	Outreach activities (Popular lectures)	-							1. Synthesis of metal nanoparticle by Dr. Bankar Ashok, Assistant Professor, Abasaheb Garware College, Pune. 2. Introduction to spectroscopy, Dr. Satyanarayana Sirasani, Former Vice Chnacellor, Osmania University, Hyderabad.								
14	Colleges mentored to apply for DBT Star College grants	-							01 Annasaheb Waghire College, Otur during application for the scheme								
15	Invited lectures	07							40								

Key Performance Indicator Department of Botany																	
S.no	Indicator	Pre-support						During /After Support						Remarks			
1	No. of students admitted  (Benifitted Departments)	<b>2019-20:</b> F.Y.B.Sc.= 132  S.Y.B.Sc.= 119  T.Y.B.Sc.= 12						<b>2020-21:</b> F.Y.B.Sc.=124 S.Y.B.Sc.= 127 T.Y.B.Sc.= 69 <b>2021-22:</b> F.Y.B.Sc.=120 S.Y.B.Sc.=84 T.Y.B.Sc.=11 <b>2022-23:</b> F.Y.B.Sc.= 104 S.Y.B.Sc.= 92 T.Y.B.Sc.= 9  Total = 92 (S.Y) + 104 (F.Y) + 09 (T.Y)									
		M= 48 (S.Y) +61 (F.Y) F=71 (S.Y) +71 (F.Y) T.Y.= 12						M= 47 (S.Y) + 34 (F.Y) F= 45 (S.Y) +70 (F.Y) T.Y. = 9									
		S	S	O	G	S	S	O	G	S	S	O	G	S	S	O	G
C	T	B		C	T	B		C	T	C		C	T	C			
		C				C											
0	1	31	115	15	18	43	1	1	11	16	49	1	16	25	61	171	
7	0						9					3					
							2					2					
2	No. of students passing out (%) Students Admitted/passing out (pass %)	Admitted-263 Passed-248 Percentage -94.40%						Admitted-205 Passed-195 Percentage -95.12%									
3	Drop-out rates	NA						-									
4	No. of students opting for MSc	6						-									
5	Average marks	First Class						-									
6	No. of hands-on experiments being conducted	2						06 (Aerobiological techniques, Mushroom cultivation, Molecular techniques, Flower arrangement, Bonsai preparation, E-herbarium workshop)									
7	No. of new experiments introduced	-						-									
8	Publications (scopus indexed) /patents, if any.	Publications: 4 Patent:0						Publications: 8 Patent: 2 Dr.V.V.Patankar (Applied) with students to NBA									
9	Training received by faculty	Training: 3 Faculty: 14						Training: 12 Faculty: 28									
10	Exhibitions/seminars/ training courses conducted	06						12									
11	Books/journals subscribed from grants	Library subscriptions						1. Plant Cell Biotechnology and Molecular Biology 2. International Journal of Current Research and Review) Journal subscribed Journals periodicals subscribed									
	Outreach activities	4						9									

	(Popular lectures)		-1 FDP interdisciplinary and 2 <sup>nd</sup> on chemical science-analytical techniques with UGC HRDC SPPU, Pune was appreciated by college teachers as well as outside teachers those who are participated. -Guest Lecture on Carrier Opportunities in pharmaceutical sciences for chemistry students by Pravin Kumar - Chromatographic techniques and Basic Molecular Biology techniques in collaboration with IIT Kharagpur -Online National Webinar (20-25 <sup>th</sup> March 2021) All Guest lectures are well known from other universities and big institutes like NCL, Osmania University, Goa university, Marwadi University, Saurashtra University, IIT Kharagpur etc.	
13	Colleges mentored to apply for DBT Star College grants	0	03 - Annasaheb Magar College, Hadapsar, Pune -Annasaheb Waghire College, Otur during application for the scheme -Vinzer College	
14	Invited lectures	26	39+47= 86	

## Zoology

S. no	Indicator	Pre-support (2019-2020)								During Support								Remarks	
1	No. of students admitted	Total = 123(SY) + 136(FY)																	
		M= 40 (SY) + 53(FY)				F=83 (SY) + 83 (FY)				M= 48 (S.Y) +61 (F.Y)				F=71 (S.Y) +71 (F.Y)					
										M= 47 (S.Y) + 34 (F.Y)				F= 45 (S.Y) +70 (F.Y)					
										M= 32 (S.Y)+ 26 (F.Y)				F=51 (S.Y)+ 60 (F.Y)					
		SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G		
2	Admission cut-off %	55 %								55 %									
3	No. of students passing out (%) [Students Admitted/passing out (pass %)]	96 %								90.46 %									
4	Drop-out rates	-																	
5	No. of students opting for MSc / M.Tech/ PG Diploma in Science	Zoology is Subsidiary subject till S.Y.B. Sc level								Zoology is Subsidiary subject till S.Y.B. Sc level									
6	Average marks	First class																	
7	No. of hands-on experiments being conducted	00																Practicals related to Apiculture in terms of hiving of honeybees and extraction of different honeybee products on 22 <sup>nd</sup>	

			January, 2023	
8	No. of new experiments introduced	00	06 1. Introduction to working and principle of instruments used in laboratory. 2. Study of water parameters with the help of water analyser. 3. Zooplankton identification. 4. Identification of insects on the basis of their types of antennae. 5. Identification of insects on the basis of their types of eggs. 6. Study of pre-embryonic development with the help of chick egg.	
9	Publications (scopus indexed) /patents, if any.	-	-	
10	Training received by (E) Faculty (F) Students (Summer/ Winter Projects)	-	Hand on Training on honeybee handling for Teaching, non-teaching faculty and students on 2 <sup>nd</sup> February, 2023. Hands on training on honey extraction process for faculty and students on 13 <sup>th</sup> March, 2022	
11	Exhibitions/seminars /training courses conducted	-	Hand on Training on honeybee handling for nearby local farmers on 2 <sup>nd</sup> February, 2023 Workshop on Life science for FY, SY and T.Y.B.S.c students on 30 <sup>th</sup> January and 31 <sup>st</sup> January, 2023 Workshop on vermicomposting on 5 <sup>th</sup> February, 2023 Workshop on Health Awareness, guidance and checkup for faculty on 1 <sup>st</sup> December, 2021	
12	Books/journals subscribed from grants	00	Advances in Environmental Sciences Journal	
13	Outreach activities (Popular lectures)	-	Wildlife related lectures- 1." Birds in Purandar tehsil" organized on 3 <sup>rd</sup> February 2021. 2." Wildlife and Wildlife photography" organized on 10 <sup>th</sup> October, 2022	
14	Colleges mentored to apply for DBT Star College grants	-	02 Annasaheb Magar College, Hadapsar, Pune Annasaheb Waghire College, Otur during application for the scheme	
15	Invited lectures	-	1. From 6 <sup>th</sup> October to 8 <sup>th</sup> October 2020 Prof. Dr. Sudhakar Murlidhar Kurhade Prof. Shrihari Ashok Pingale Prof. Dr. Vidhin Sunder Kamble 1. From 1 <sup>st</sup> February to 3 <sup>rd</sup> February 2021: Dr. Baban Shravan Ingole Prof. Dr. Abhay Khandagale Shri Amit Pawashe 2. 5 <sup>th</sup> February 2021: Shri Prashant Borawake 4. From 30 <sup>th</sup> January to 31 <sup>st</sup> January, 2023: Dr. Gulab D. Khedkar, Dr. Laxmikant V. Shinde, Dr. Narsingrao N. Bandela, Dr. S.L.Laware, Dr. Aruna Bhambare and Ms. Chaitali Kshirsagar 5. 10 <sup>th</sup> October 2023:	

			Prashant Borawake	
			<b>13+10= 23</b>	

- Proofs (S.No. 6-14 not more than 5 pages per departments, 1.5 line spacing 11 times roman font size) to be provided duly attested by Principal and Coordinator.

9. 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.

We provided guidance to three prominent colleges affiliated with the Pune District Education Association—Annasaheb Magar College in Hadapsar, Pune; Anant Pawar College in Pirangut; and Annasaheb Waghire College in Otur, along with Vinzer College during their application for the DBT-STAR College scheme. Our assistance involved advising them on how to formulate and articulate the proposal, suggesting key elements expected in the submission. Additionally, we provided guidance on the necessary proof and documentation required for the proposal.

As an outcome of our collaborative efforts, these colleges successfully applied for the grant, and some of them have progressed to the consideration phase in the first round of the application process.

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

In the academic year 2020-21, the faculty actively engaged in seeking extramural research grants from diverse funding agencies to enhance the efforts of the Star College Scheme. Notably, applications were submitted for projects related to computer software development, MVOc food technology, and retail management. The collaborative efforts of college teachers in preparing these applications proved instrumental in securing grants, significantly reinforcing laboratory facilities.

Additionally, the institution applied for PM USHA, demonstrating a commitment to exploring various avenues for resource augmentation. Teachers within the institution have also pursued funding opportunities through schemes offered by prominent entities such as the Department of Biotechnology (DBT), Department of Science and Technology (DST), and Science and Engineering Research Board (SERB) POWER. These initiatives aim to secure funding for research projects, aligning with the inspirational bracket or base studies outlined under the DBT STAR Scheme. Although these proposals are currently in the processing stage, they reflect the proactive approach of the faculty in seeking external funding to bolster research endeavors.

The staff members at our institution have derived significant benefits from the instruments acquired under the DBT Star College Scheme. This support has facilitated their pursuit of Ph.D. degrees, with one member having successfully completed their doctoral program and another currently in the process of pursuing a Ph.D. These achievements underscore the positive impact of the DBT Star College Scheme in providing essential resources and opportunities for professional and academic advancement among our staff.

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

Departments that have benefited from the initiatives have diligently formulated Standard Operating Procedures (SOPs) for additional practical sessions. The practicals are systematically executed following these established protocols, ensuring a standardized and streamlined approach. Recognizing the significance of these protocols, efforts are underway to publish an extra practical manual under the DBT Star Scheme. The manual is currently in the publication process, and once finalized, it will be promptly submitted to the Department of Biotechnology (DBT) for the subsequent steps in the publication procedure.

### 13. Self-evaluation

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
<b>Chemistry</b>	1. Guest lecture, Hands on training and Workshops 2. Faculty development programme 3. Extra Practical's, Minor research project conducted 4. MOU with other institution and companies 5. Industrial visits	96%	Reason for under achievement- -Pandemic impositions, -Workshop and hands on training -Industrial/Field visits delayed -Insufficient of time due to disturbed university academic calendar schedule, non-receival of grants in time from the institution.
<b>Microbiology</b>	1. Guest lecture, Hands on training and Workshops 2. Faculty development programme 3. Extra Practicals, Minor research project conducted 4. MOU with other institution and companies 5. Industrial visits	96%	Reason for under achievement- 1. Pandemic impositions, 2. Lack of manpower, -Workshop and hands on training -Industrial/Field visits, -Extra practicals because of pandemic restrictions and no offline schools -FDP is delayed because of permission and insufficient grant -Insufficient of time due to disturbed university academic calendar schedule
<b>Botany</b>	1. Guest lecture, Hands on training and Workshops 2. Faculty development programme 3. Extra Practicals, Minor research project conducted 4. MOU with other institution and companies 5. Industrial visits	100%	Reason for under achievement- 1. Pandemic impositions first semester, -MOU in process with Marwari University Rajkot, Gujrat - Industrial/Field visits delayed because of pandemic restrictions and no offline schools/colleges. -Insufficient of time due to disturbed university academic calendar schedule
<b>Zoology</b>	1. Guest lecture, Hands on training and Workshops 2. Faculty development programme 3. Extra Practicals, Minor research project conducted 4. MOU with other institution and companies 5. Industrial visits	98%	Reason for under achievement- 1. Pandemic impositions, -Workshop and hands on training delayed -Industrial/Field visits delayed because of pandemic restrictions and no offline schools/colleges. -MOU KVK Baramati is in progress -FDP is delayed because of permission and insufficient grant -Insufficient of time due to disturbed university academic calendar schedule

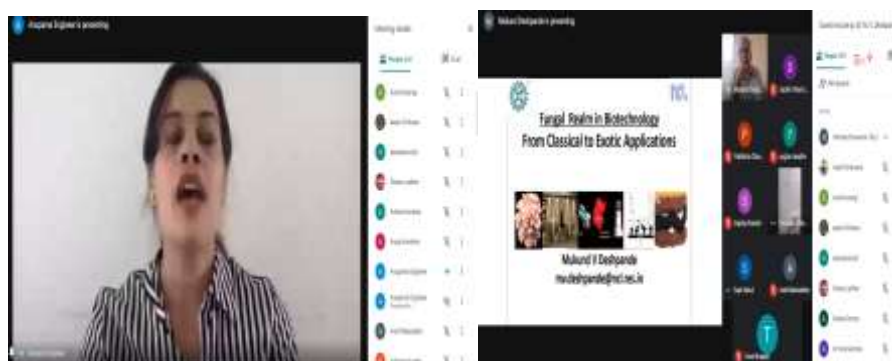
  
 Course Coordinator  
 (With Seal)  
 DBT- STAR College



  
 PRINCIPAL  
 Head of the Institution  
 Waghire College, Saswad  
 Tal. Purandar, Dist. Pune.

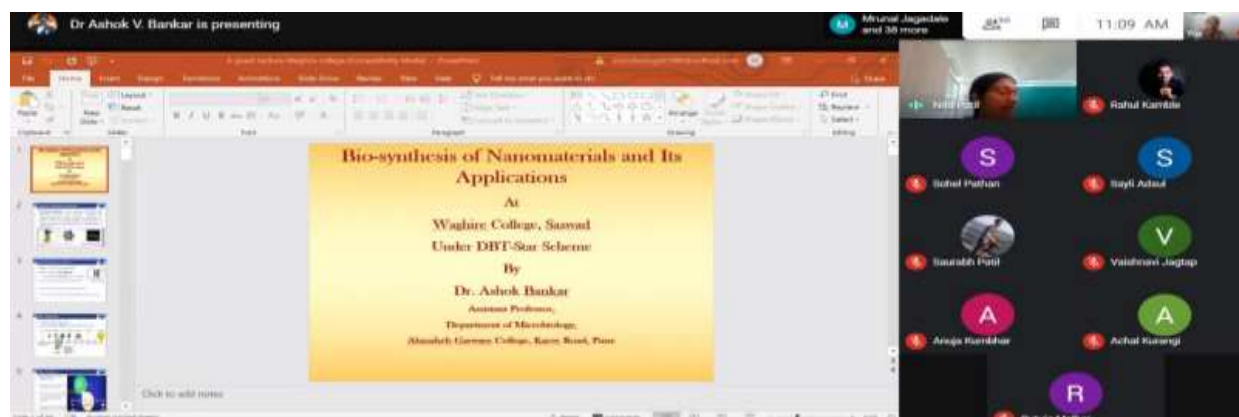


The second lecture series started in the month Jan' 2021. On 21st January 2021, a guest lecture was organized on “Antibiotic- Boon or Bane” for T.Y.B. Sc. Microbiology students at 11.00am. The lecture was organized to make students familiar with the concept of Antibiotics, its history and its application throughout the world. We invited a very dashing, an eminent scientist & multitasking personality Dr. Anupama Engineer, COO and Cofounder, Weinnovate biosolutions Pvt. Ltd, Pune as a resource person to share her knowledge, research work and experience in the said topic. In the second lecture for T. Y. B. Sc. Microbiology students on 22<sup>nd</sup> Jan 2021 at 11.00 am to 12.30 pm. The lecture was organised to understand the Role of Fungi in Biotechnology. Dr. M. V. Deshpande, being Microbiologist and Researcher, shared his knowledge and experiences in this field.



On 23<sup>rd</sup> January 2021, a guest lecture was organized on “Fermentation Technology” for S.Y.B. Sc. Microbiology students. The lecture was organized to make students understand the concepts of Fermentation, its types, techniques and applications. As Fermentation technology is the part of S.Y.B.Sc curriculum, we had an eminent presence of Mr. Vandana Ghule, from VSI, Manjari, Pune as a resource person to share his knowledge and expertise in the said topic.

In the third lecture series, on 8<sup>th</sup> March 2021, a guest lecture was organized on “Career Opportunities after B.Sc”& “Strategies to Crack competitive Examinations after B.Sc” on 8<sup>th</sup> and 9<sup>th</sup> March 2021 respectively for T.Y.B. Sc and S.Y.B. Sc students. The lecture were delivered by one of our pride, an alumni of college Mr. Vishal Bhujbal. He guided students by providing the following list of M.Sc. entrance examinations with their probable dates of commencement and closing of examination forms. Another lecture for T. Y. B. Sc. Microbiology students was scheduled on 10th March 2021 at 11-00 am under DBT Star Scheme. The honourable guest, Dr. Ashok Bankar, Assistant Professor, MES Abasaheb Garware College, Pune shared his knowledge and research experiences in the field of Nanotechnology.



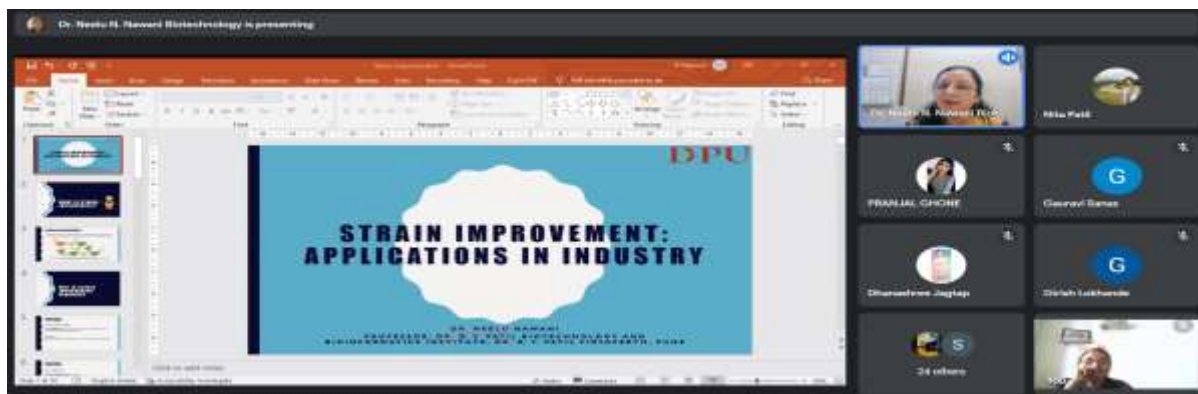
A virtual visit was arranged to the Blood bank for T.Y.B.Sc. students on 30th January 2021 at 11.00 am. to learn blood bank techniques of collection, separation and storage of blood and blood components and other blood bank practices.

**Academic year 2021-22:**

On 30<sup>th</sup> Oct 2021, a guest lecture was organized on “recombinant DNA Technology” for T. Y. B. Sc. microbiology



students. The lecture was organized to make students understand the concepts of rDNA technology and its application in Fermentation technology to produce Insulin. We had an immense presence of an eminent personality Dr. Neelu Nawani, Professor and Incharge of Microbial Diversity Research Centre, Dr. D. Y. Patil Biotechnology and Bioinformatics Institute, Dr. D. Y. Patil Vidyapeeth, Pune as a resource person to share her knowledge and expertise in the said topic.



Under DBT Star College Scheme, the department of Microbiology had organized two days training program for T.Y.B.Sc. students. It was organized in collaboration with MakelIntern and E-Cell IT Kharagpur. Total of sixty two Ty.B.sc. students participated in the training session. The idea behind this training program was that, students of T.Y.B.Sc. class in their theory courses are learning about different types of chromatographic and molecular biology techniques and if they could get hands on experience of the same it would be easier to understand the concepts. Also after these training program 4-5 students were identified by the mentors, who could participate in the final championship to be held at IIT Kharagpur campus.



Inauguration function of Training program on "chromatographic Techniques and Basic Techniques in Molecular Biology" conducted on 14<sup>th</sup> and 15<sup>th</sup> March 2022

Another training session was arranged for T.Y.B.Sc. students on 27<sup>th</sup> and 28<sup>th</sup> March 2022 for 'Enrichment, Isolation and enumeration of Bacteriophages'. The enrichment and isolation of bacteriophages is a very tricky procedure, so to understand step by step process, hands on training by Dr. Sangita Ahiwale was arranged. The department of Microbiology had organised a study visit for T. Y. B. Sc. Microbiology students on 21<sup>st</sup> March 2022 to Krishi Vigyan Kendra (KVK), Baramati, Innovative Research and Atal Incubation Centre (AIC), AIC-Adt Baramati Foundation and Tirupati Balaji Agro Product Private Limited, Someshwar Nagar, Baramati.



4.27

IMG-20220323-WM0270.jpg



### Academic year 2022-2023:

This year the department of Microbiology signed two MoUs, first with KanBiosys Research & Education Foundation [KREF] and another with SanaRica foods, Jejuri.

Activities conducted under this first Mou were, lecture on Concept and use of Bioinoculants, Use of bioinoculants in fields and use of Foliar micronutrient spray.

In the second MoU, activities conducted were 1. Collection of food samples of different products manufactured by SRF as and when agreed mutually. 2. To understand the processes and methodology required to analyse the samples as per FSSAI and FSSC 22000 standards. 3. To carry out the laboratory testing of food products and to maintain batch wise record of the same to be shared with SRF from time to time.

One day Workshop on 'Mind Power and Stress Management' by Dr. Datta Kohinkar was organized for teachers, administration staff and students on Tuesday, 17th January 2023. Guest speaker, Dr. Datta Kohinkar is a mind power trainer and an author. The audience could experience power of words, positive affirmations and got the keys to relieve stress in day to day life.



Microbiology department had organized a guest lecture on “Future in Life Sciences” for T. Y. B. Sc. students, on 2<sup>nd</sup> Feb 2023. The lecture was organized to make students aware of the opportunities available in Life Sciences. As this year is turning point in their life and they should know different prospects in the field they are studying. We had an immense presence of an eminent personality **Dr.SanjeevPatankar**, National Coordinator, Microbiologist Society of India, as a resource person to share his knowledge and expertise in the said topic.



Guest lecture by 'Dr. Sanjeev Patankar' on topic

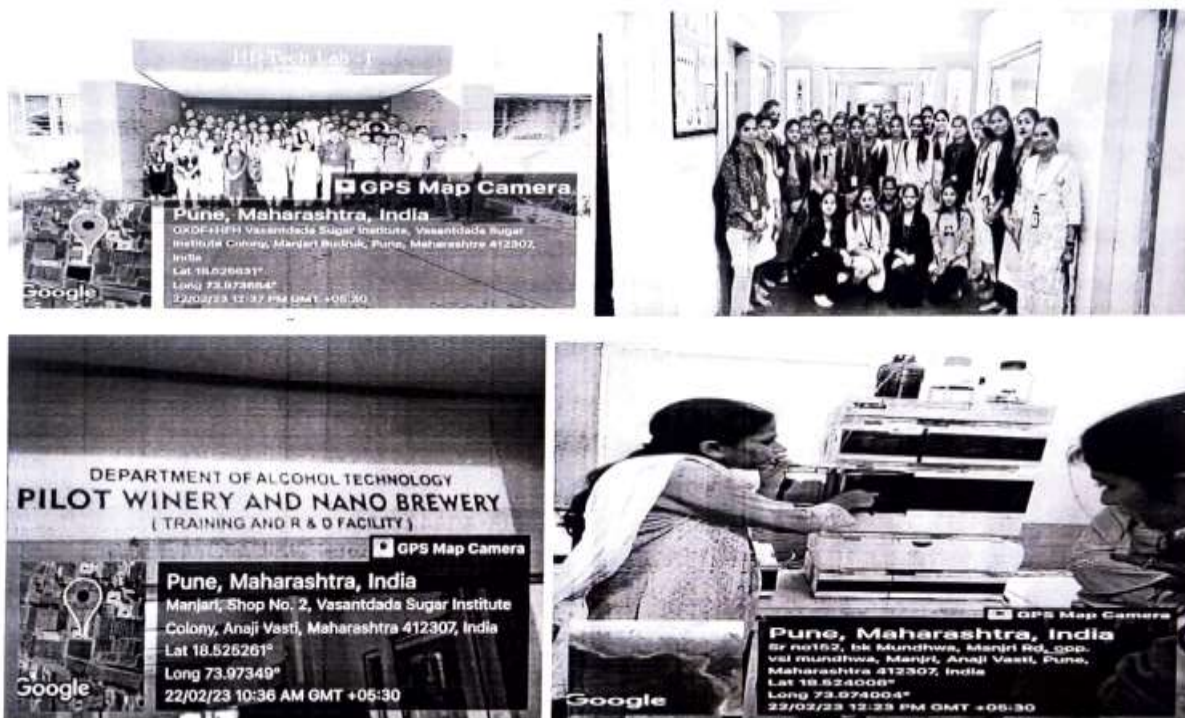
A lecture series on 'Scientific Writing and Communications: Papers, Proposals and Presentations' for science teachers, TYBSc microbiology students and all science PG students was organized on 7<sup>th</sup> February 2023. Dr. Shital Shevate started her lecture with the basics of scientific writing style and composition. She tried to make the students

aware of all the possible problems and errors, one would face during his or her research work and in a very simple way, she told them how to overcome these difficulties. She explained the application of these principles for scientific writing while preparing research papers, review articles and grant proposals. Students need to know the above said to successfully promote their research and career.

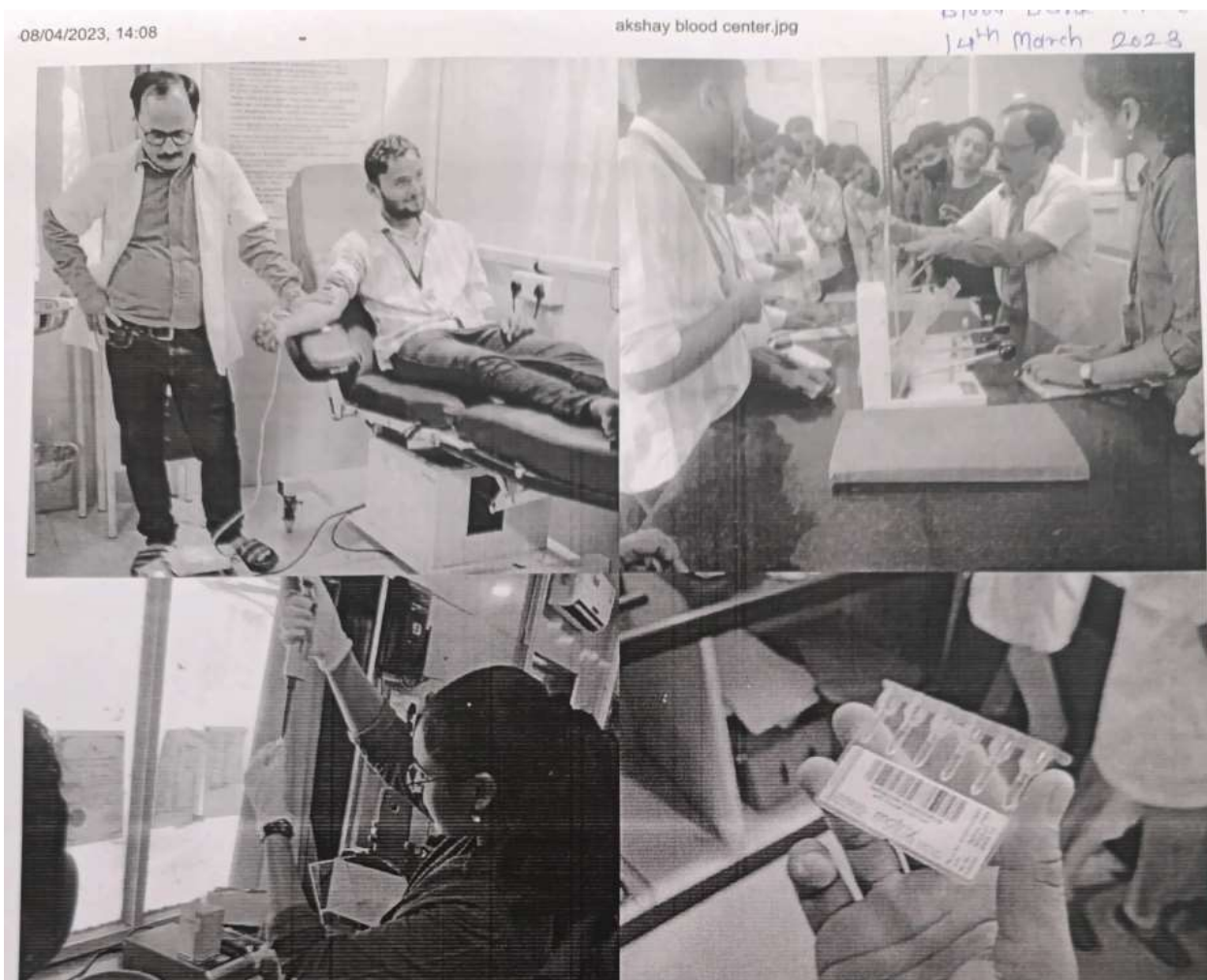


The department of Microbiology had organized a study visit of T.Y.B.Sc. students to one of reputed institute in Pune, Vasantdada Sugar Institute, Manjari, Pune. At the VSI, students were taken to HiTech Lab I where they were shown different departments where they analyse molasses, water used in fermentation, laboratory scale fermenters to study effect of different parameters, such as pH, temperature, aeration, agitation as well as different microbial cultures on the production of alcohol. Then they visited to their sophisticated instrument room where instruments like HPLC, Ion exchange chromatography, Gas liquid chromatography, flame ionisation detector, Uv-Visible double beam spectrophotometer were present. Students were given an explanation of these instruments' functions, principles, and uses.

Department of Microbiology: VSI Visit of T.Y.B.Sc students on 22<sup>nd</sup> Feb 2023



Another visit of T.Y.B.Sc. students was planned at Akshay Blood bank, Hadapsar.



#### **Academic year-2020-2021:**

- **The Department of Zoology received a grant of 10 lakhs under the DBT-STAR College scheme during August 2020.** Hence through this financial help, the department purchased various new equipments and books for enhancing the department. **The department organised two Online 3- days Lecture series, a quiz and one online workshop on Vermicomposting during this academic year under the DBT STAR College Scheme.**
- **The first online 3 days lecture series was organized under the DBT- STAR College Scheme from 6th October to 8th October 2020, to celebrate the Wildlife Week and to create awareness amongst students regarding the Wildlife.** The three guest speakers invited for the First lecture series on the three respective days were 1. Prof. Dr. Sudhakar Murlidhar Kurhade, New Arts, Commerce and Science College, Shevgaon, Dist. Ahmednagar (Topic- “Avian diversity”; 64 participants); 2. Prof. Shrihari Ashok Pingale, Sangamner Mahanagarपालिका Arts, D.J. Malpani Commerce and B.N. Sarda Science college, Sangamner, Dist. Ahmednagar (Topic- “Wildlife Protection and Acts”; 80 participants) and 3. Prof. Dr. Vidhin Sunder Kamble, Sangola college, Sangola, Dist. Solapur (Topic -“Biodiversity- Conservation and Laws”; 86 participants) respectively. **A Quiz competition was also organized from 6th October- 8th October, 2020 for the Students of F.Y.B. Sc and S.Y.B. Sc Zoology students,**

wherein about 213 students from other colleges and Waghire college participated in it.



- **The second online 3 days guest lecture series was organized again under the DBT STAR College Scheme from 1<sup>st</sup> February to 3<sup>rd</sup> February 2021.** Three eminent and well-known personalities were invited for the lecture series as guest speakers on the three respective days 1. Dr. Baban Shraavan Ingole, Visiting Scientist, National Centre for Polar and Ocean Research, Vasco, Goa and Former Chief Scientist and Head of Biology Division, National Institute of Oceanography, Dona Paula, Goa (Topic- “Marine Biodiversity”; 88 participants) 2. Prof. Dr. Abhay Khandagale, Principal and Head of Zoology Department of Prof. Ramakrishna More College, Akurdi, Pune (Topic- “The role of Zoology in Medical sciences”;100 participants) and 3. Shri Amit Pawashe, Renowned Ornithologist of Purandar tehsil, Pune (Topic-“Birds in Purandar tehsil”; 86 participants) respectively.



- **An online workshop titled “Online Workshop on Vermicomposting”** was organized on 5th February, 2021 under the DBT- STAR College scheme by the Department for all the F.Y and S.Y.B.Sc Zoology students. The guest speaker invited for conducting this workshop was Shri. Prashant Borawake, An Environmentalist and Coordinator of Paani Panchayat, an NGO ran under the guidance of Gram Gaurav Pratisthan, Khalad. Through his live video and also presentation, he explained the importance and the need for Vermicomposting. The workshop was organized with an aim of educating and providing basic knowledge to the F.Y.B.Sc and S.Y.B.Sc Zoology students regarding vermicomposting, vermiculture and use of vermicompost. Due to excessive use of inorganic fertilisers and pesticides, the field soil loses its fertility as a consequence of death of soil organisms. It also causes production of poor- quality fruits and grains. Soil pollution is another environmental issue which arises due to extensive usage of

inorganic fertilisers. Hence, Preventive and curative measures require to be taken for increasing the soil fertility. One such measure which is clean, sustainable and zero waste is vermicomposting. Since, majority of the students have agricultural background, by learning the basics of vermicomposting through the online workshop, they can in an own manner carry it out in their fields.



### Academic year- 2021-2022:

- During the year 2021-2022, the department organised many activities like one day workshop on Health Awareness, Guidance and Check-up for College teaching and non-teaching staff; one day workshop on Apiculture and related practicals; one day Hands on Training on honeybee handling; one day field visit to Apiculture and Fish farm unit of Krishi Vigyan Kendra, Baramati and Virtual Animal Museum for smart classroom for Zoology U.G. students.
- In the one-day workshop on Health awareness, Guidance and Check-up conducted on 1<sup>st</sup> December, 2021, various health parameters like Haemoglobin, Sugar level, Blood pressure, Body Mass Index, Bone Marrow Density and ECG were checked of 116 staff members from both teaching and Non-teaching faculty. Those staff members who were found to have high blood pressure, increased blood sugar, low bone density and irregular ECG were asked to consult the doctors for further treatment.



**Felicitation of Doctors**

**Teaching and Non teaching staff**

**Bone Density Check-up**



**Dr. Balgir and Dr. Pandhare checking B.P., BMI, Blood Sugar Level etc.**



**Blood sample collection Hemoglobin check-up**

**Over all consultation by Dr. Gavhale**

- One day workshop on Apiculture and related practicals on it was conducted on 22<sup>nd</sup> January 2022 wherein Shri Prashant Gawade and Shri. Sachin Kshirsagar from the Krishi Vigyan Kendra, Malegaon

Khurd, Baramati explained the students the basics of Apiculture, history of apiculture, the role played by the honeybees in ecology and economy, the equipments used in apiculture and also how to handle the honeybees, and the extraction processes of honey, beeswax, propolis, pollens, royal jelly and bee venom. 65 students benefitted from this workshop.



- One day Hands on Training on Honey bee handling for the teaching and Non-teaching staff of Zoology department, students and near-by farmers was also organized on 2<sup>nd</sup> February, 2022. 73 individuals comprising of 11 farmers and 62 students and four faculty members received hands on training on handling of bees, hiving of bees, setting up of apiary, flora and vegetation around the apiary as food source for the bees and the benefits derived from an apiary after setting it up. Also, the 9 bee boxes purchased by the Zoology department under the DBT Star College scheme in the academic year 2020-2021 were installed in the college botanical garden to establish an Apiary.





The Department of Zoology had organized hands on training on Honey extraction from the bee boxes set up in the College Botanical Garden on Sunday, 13th March, 2022 for the Zoology Department staff. This workshop was conducted by Mr. Alpesh Wagh and Mr. Sachin Kshirsagar from Krishi Vidhyan Kendra, Malegaon Khurd, Baramati. Mr. Alpesh Wagh explained the exact process of how honey extraction while Mr. Sachin Kshirsagar carried out the practical process of honey extraction. Dr. B.U. Mane, Dr. B.S. Madbhavikar, Prof. S.A. Kokare and Mrs. R.S. Nevase received hands on training on Honey extraction along with 11 interested students.



The Virtual Animal Museum, one of its kinds in the whole of PDEA colleges was also prepared by the Zoology department by filming all the animal specimens and slides kept in the Zoology department by utilising the DBT-STAR College Scheme grant. The intention behind this activity was to make available the specimens virtually to the students in-case of damage or breakage of specimen bottles or specimen etc. Also, as per the Ministry of Environment, Govt. of India and Wildlife authorities, collection, killing and preservation of animals is banned as per the WPA, 1972, hence preserving the

museum specimens virtually was another reason for carrying out the filming.

- A one day field visit was also organised for the S.Y.B.Sc Zoology students to the Apiculture and Fish farm unit of Krishi Vigyan Kendra, Baramati on 5th March, 2022. 42 students along with their Zoology teachers- Dr. B.U. Mane, Dr. B.S. Madbhavikar and Prof. S.A. Kokare received information with regards to honey bees species, honeybee products, beekeeping equipments, ecological role of honeybees and economy generated from apiary setting. Besides Apiculture, they also received information on Fisheries unit, which is a part of their syllabus. From Entrepreneurship and Zoological Skill development point of view, the students gained knowledge not just on Apiculture or Beekeeping skills but also on cultivation and marketing of fresh water edible fishes, cultivation of goats and sheep under Animal Husbandry and Poultry management.

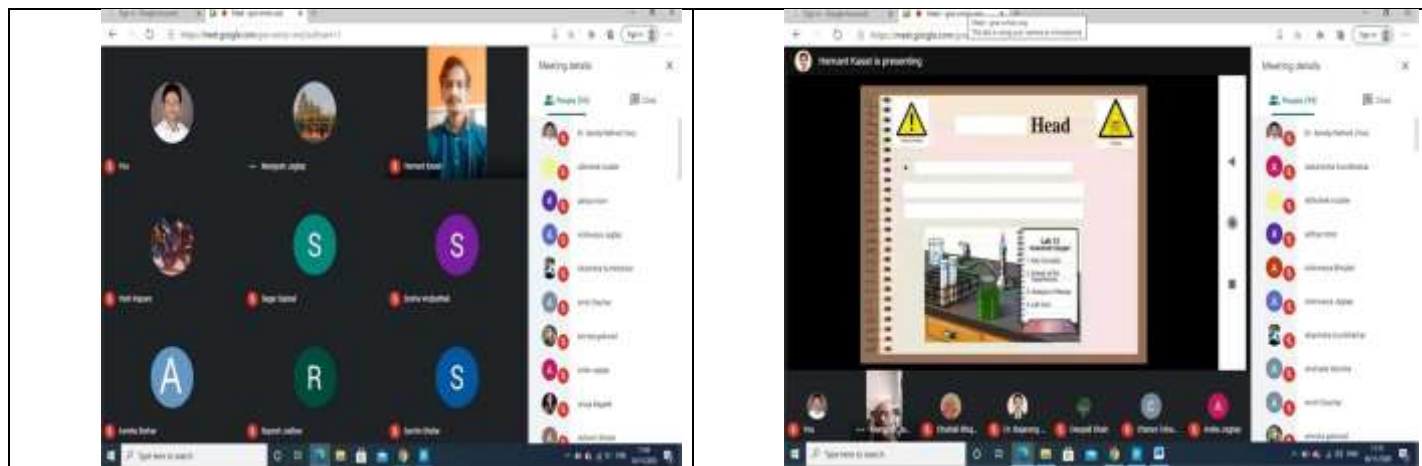


Prof. S.A. Kokare conducted a one- day biodiversity survey of the Kadjai Vanrai, Chambli village; Tal. Purandar on 30<sup>th</sup> Dec, 2021 wherein he observed 37 bird species, 6 mammalian species and 12 invertebrate species in the scrub –arid grassland area of the Vanrai.

## Report of Department of Chemistry

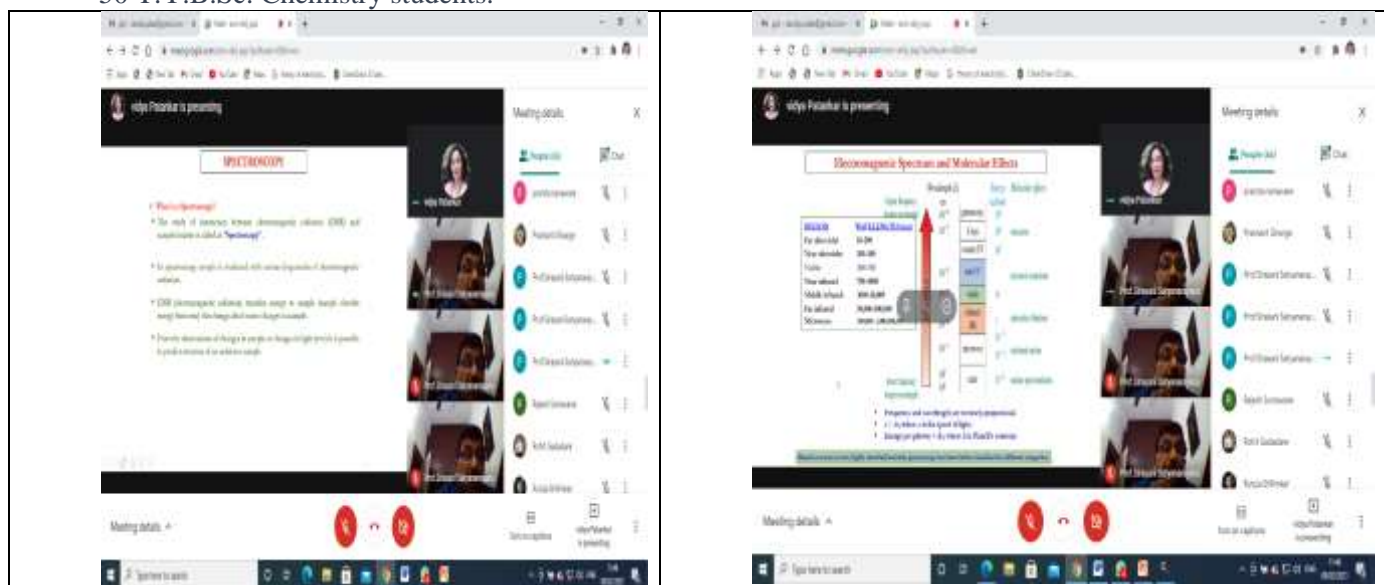
### Workshop on Laboratory Safety:

A lecture on "Laboratory Safety" featured Mr. Hemant Kasat from Synlet Pvt. Ltd., Pune, providing valuable insights to 93 UG students. Dr. M.M. Jagtap introduced and anchored the session, with Dr. Sandip Rathod delivering the vote of thanks. The event aimed to educate students on safe laboratory practices and handling toxic chemicals.

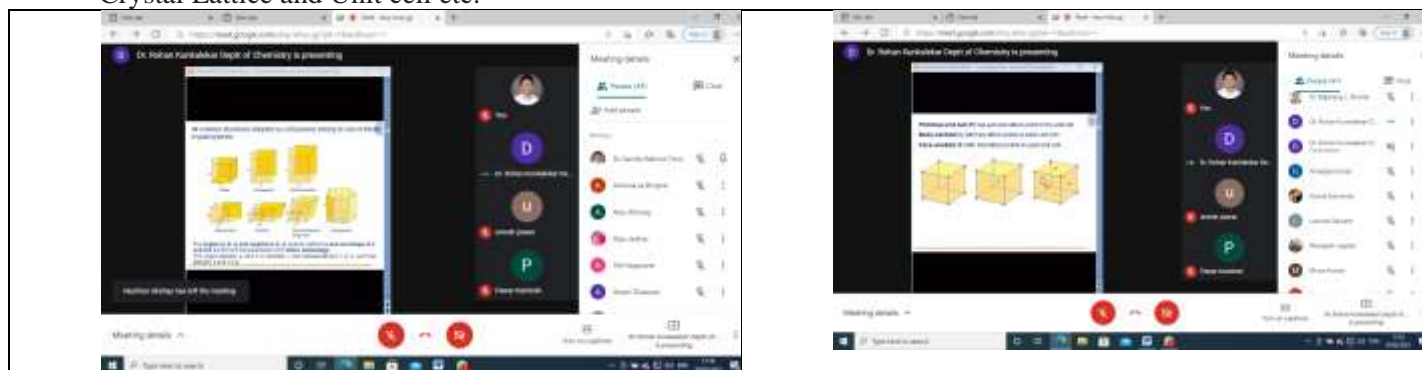


### Guest Lectures:

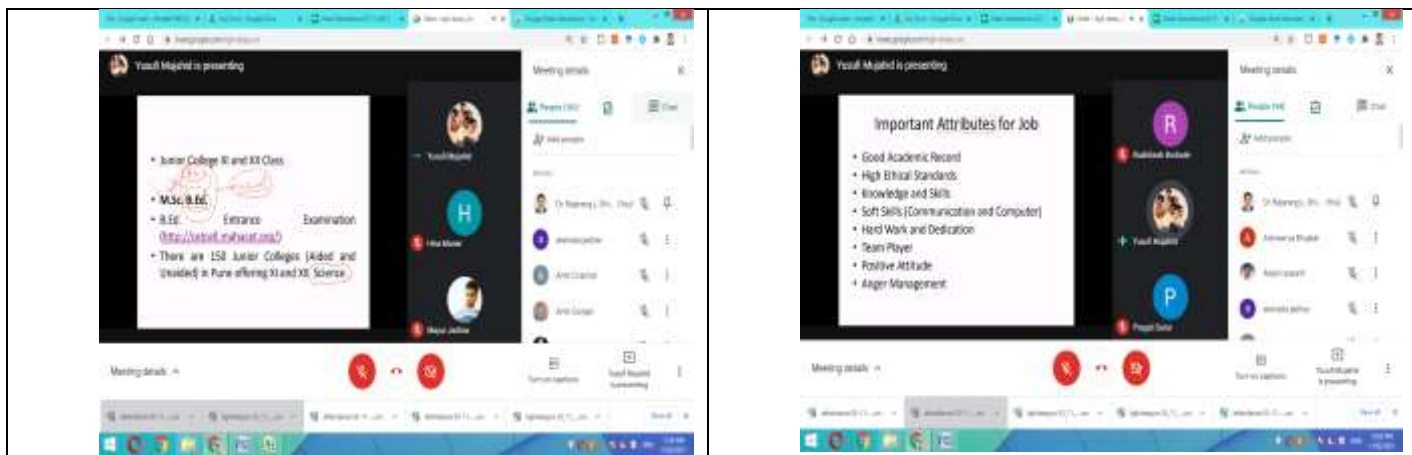
Under the DBT Star College Scheme, the Chemistry department hosted a guest lecture on Gravimetric analysis for T. Y. B.Sc. students, with Professor Dr. K. M. Gadhave from Ramkrishna More College Akurdi, Pune, enlightening 21 students on gravimetric methods, precipitation, coprecipitation, common ion effect, and solubility product. The department also organized an online guest lecture series for UG students, featuring Dr. Satyanarayana Sirsani's session on General Introduction to spectroscopy-UV Visible spectroscopy, attended by 50 T.Y.B.Sc. Chemistry students.



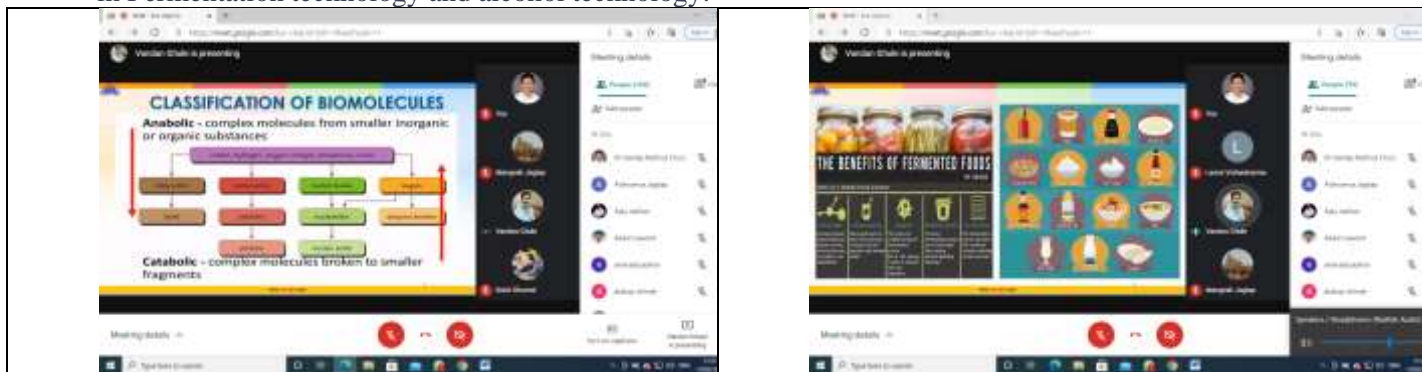
The second guest lecture on Solid State Chemistry was delivered by Dr. Rohan Kunkalekar, Assistant Professor, Department of Chemistry, Goa University. For this lecture 64 T Y B Sc students were present. The students learn difference between crystalline and amorphous solid, properties of crystal, crystal system, Crystal Lattice and Unit cell etc.



Dr. Yusufi Mujahid from Abeda Inamdar Senior College delivered the third online guest lecture on Career Opportunities in Chemical Sciences for 100 UG students. The lecture covered various career paths in chemical sciences, including opportunities in chemical and pharmaceutical industries, research, education, and different M.Sc. specializations. Students were motivated to pursue further studies like NET, SET, Ph.D., and M.Phil. after completing their Master's degree, actively engaging in discussions with the resource person.



Dr. Vandana Ghule, Technical Officer at VSI Pune, delivered the fourth lecture on "Fermentation Technology" for T Y B Sc students. The comprehensive session covered various aspects such as chemical changes in processes, applications of chemistry in biofuels, bioplastics synthesis, green chemistry, fermentation technology, benefits of fermented foods, beverage production, wine making technology, and the role of chemistry and microbiology. The lecture also motivated students and provided insights into career opportunities in Fermentation technology and alcohol technology.



The department of Chemistry also organized guest lecture for T Y B Sc Students on Career opportunities in pharmaceutical Sciences. For this lecture Mr. Praveen Kumar, Head, quality assurance, Surge Pharmaceuticals Pvt Ltd, Jejuri MIDC, Pune was invited as a resource person. In this lecture students are guided for job opportunities available in various fields of pharmaceutical industries. In addition to that students were also guided for the how to apply for job in pharmaceuticals industries. From this lecture students also benefited to know how to prepare for interview, what are the requirements industry needs for job. Students are also motivated for how to search for jobs and how to apply what type of skills are required were also discussed in details.



### Online workshop on UV-Visible spectroscopy:

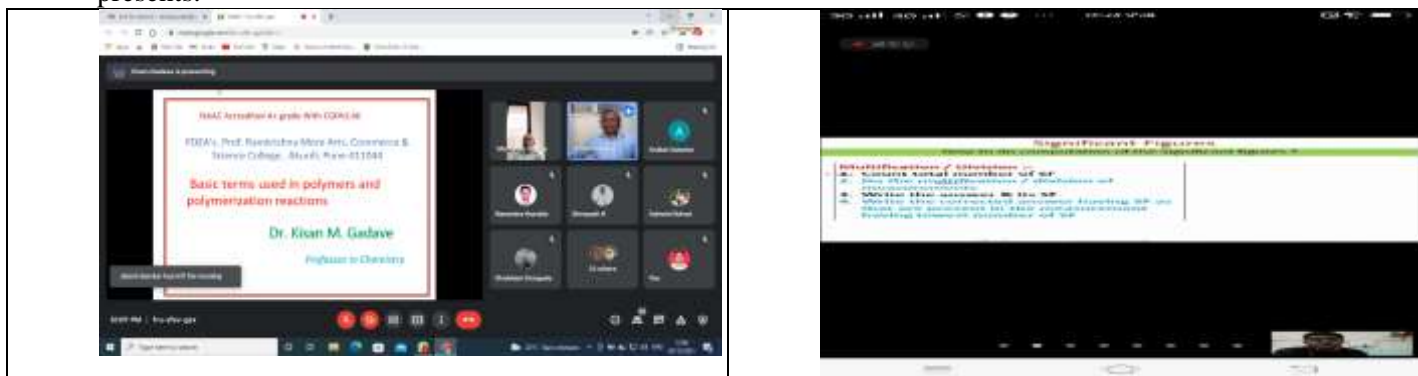
The department of chemistry also organized one day online workshop on UV-Visible Spectroscopy for S Y and T Y B Sc Students on 10/03/2021. For this workshop Prof. Ganesh Nigade, Assistant Professor, SGRS College of pharmacy is invited as Resource Person. The Workshop is conducted in two session I (online Theory) and Session –II (Instrumentation). From this workshop students learn Basic principle of UV spectroscopy, Calibration of Instruments, Preparation of sample, Spectra recording, Spectral interpretation, determination  $\lambda_{max}$  etc. For this workshop 100 students were present.



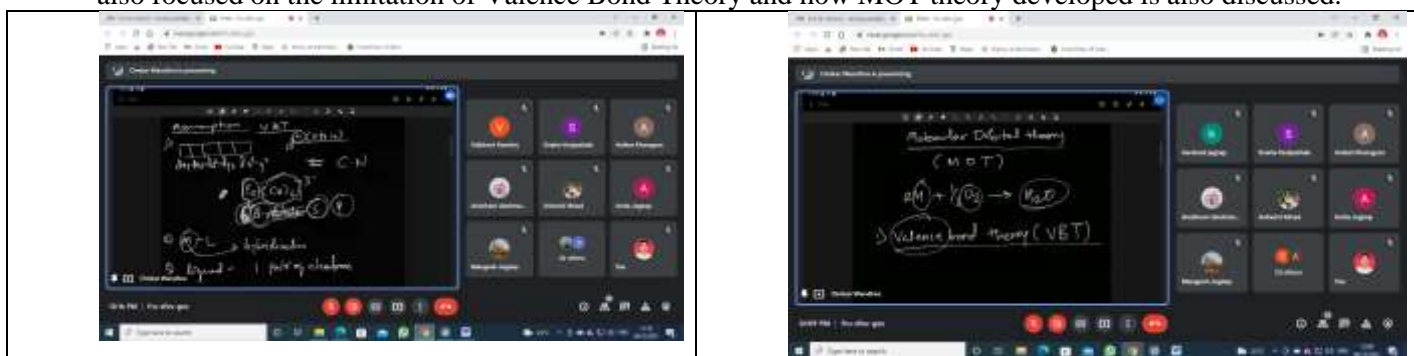
The First online guest lecture was delivered by Prof. Manojkumar Tapre, Assistant Professor, Amrutheswar Arts, Commerce and Science, Vinzer Velha, Pune on **Significant Figure and Computation** on 2<sup>nd</sup> December 2021 at 12:00 pm to 01:00 pm. In this lecture student learns General introduction to significant figures, what is significant figure, importance of significant figures, students understands and solve different examples based on significant figure. Students also learn about computations, Rules of computations through suitable examples.

The second lecture was delivered by Dr. K.M. Gadhave Professor, Ramakrishna More College, Akurdi, Pune on **Basic Terms used in polymerization reactions** 3<sup>rd</sup> December-2021 at 12:00 pm to 01:00 pm. The lecture is started with general introduction and definitions of polymer, Types Classifications of polymer, Methods of synthesis of polymers and general applications of polymers etc. For this lecture 31 students of T Y B Sc

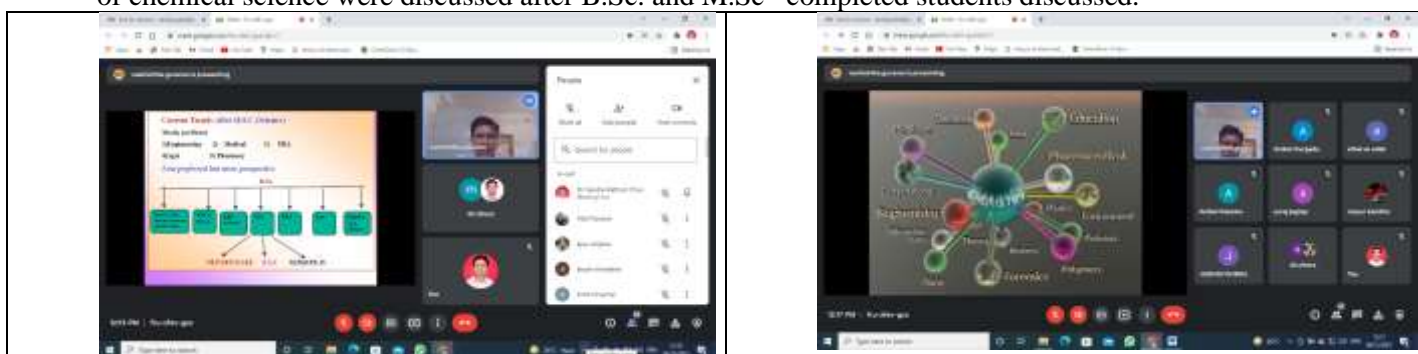
presents.



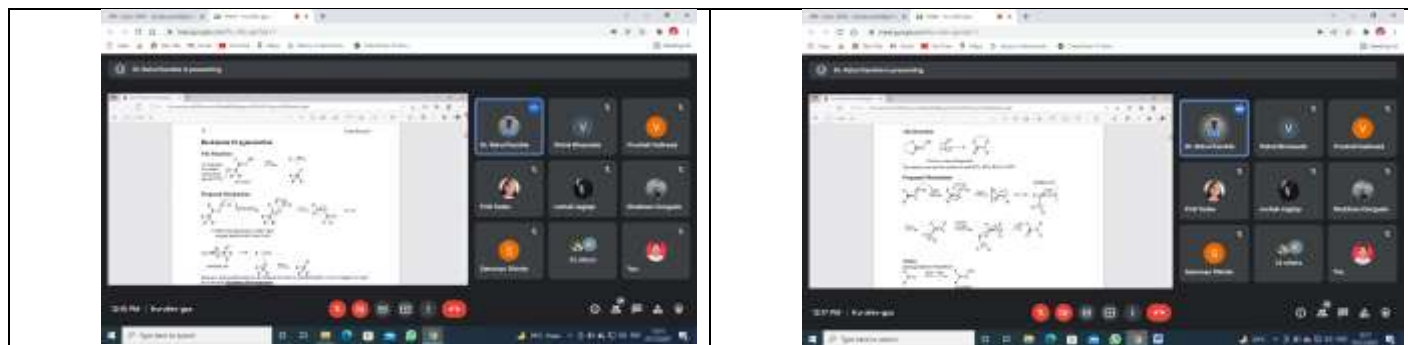
The Third lecture was delivered by Prof. Omkar Wandhre , Assistant Professor Department of Chemistry, Amrutheswar college of Arts, Commerce and Science, Vinzer, pune on “**Molecular Orbital theory of Co-ordination Complexes**” on the 4<sup>th</sup> December 2021 at 12: 00 pm to 1:00 pm. In this lecture introduction to co-ordination complexes discussed, briefly Werners co-ordination theory was first discussed, then next Valance Bond theory of Co-ordination complexes are discussed with suitable examples in addition to that, the lecture also focused on the limitation of Valence Bond Theory and how MOT theory developed is also discussed.



The Fourth online guest lecture was delivered by Dr. Gurme V M, Assistant Professor Department of Chemistry, Shri Shivaji College Barshi, Osmanabad on “**Career Opportunities in the Chemical Sciences**” on the 6<sup>th</sup> December 2021 at 12: 00 pm to 1:00 pm. In this lecture various career opportunities available in the field of chemical science were discussed after B.Sc. and M.Sc completed students discussed.

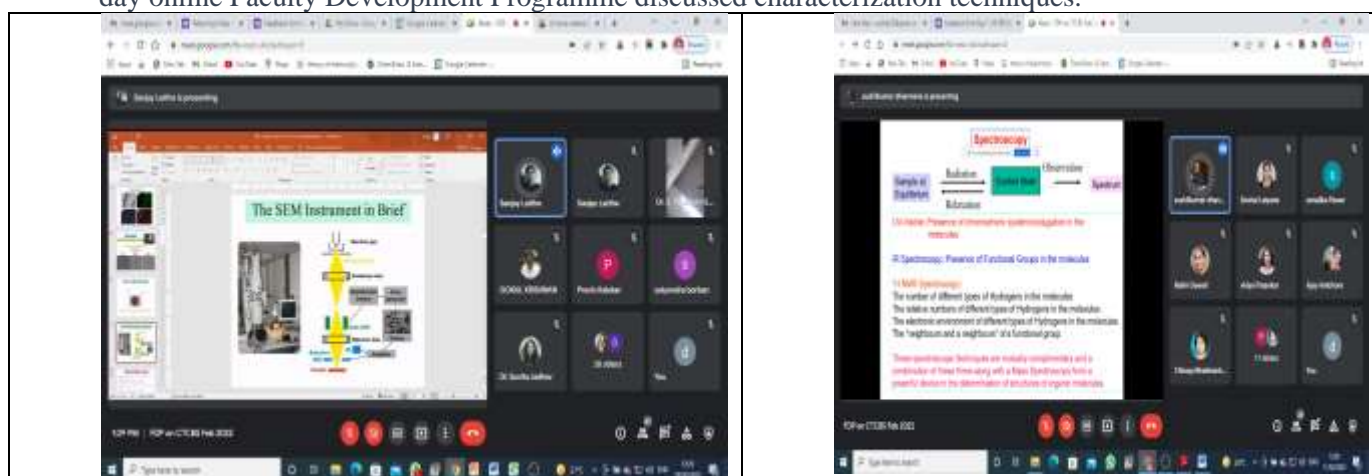


The Fifth online guest lecture was delivered by Dr. Rahul Kamble , Assistant Professor Department of Chemistry, Amruteshwar College , Vinzer, Pune , on “*Rearrangement Reactions*” on the 7<sup>th</sup> December 2021 at 12: 00 pm to 1:00 pm. In this lecture, various rearrangement reactions was discussed. In this lecture Beckmann rearrangement, Beayer Velliger reactions, Ferovski Rearrangement reactions, Pinacol Rearrangement reaction was discussed with various examples and their mechanisms also discussed.



### Faculty Development Programme:

The Chemistry department organized a one-day online workshop on UV-Visible Spectroscopy for S Y and T Y B Sc Students, covering basic principles and instrumentation with Prof. Ganesh Nigade. A series of online guest lectures featured topics such as Significant Figures by Prof. Manojkumar Tapre, Polymerization Reactions by Dr. K.M. Gadhave, Molecular Orbital Theory by Prof. Omkar Wandhre, Career Opportunities in Chemical Sciences by Dr. Gurme V M, and Rearrangement Reactions by Dr. Rahul Kamble. Additionally, a 7-day online Faculty Development Programme discussed characterization techniques.



### Workshop on Soap and Detergent Making:

a two-day workshop on Soap and Detergent Making, led by Dr. Shaikh Faazil and, explored job opportunities in pharmaceutical industries. The Department of Chemistry, was organized two day workshop on “Soap and Detergent making under DBT STAR scheme of the college during the academic year 2021-2022 on 28/03/2022 and 29/03/2022 at 10:00 am onwards.



### Industrial Visit:

The Department of Chemistry, was organized one day Industrial Visit at **Someshwar Sahakari Sakhar Karkhana Ltd (Sugar Manufacturing Industry)** under DBT STAR College scheme of the college during the academic year 2021-2022 on 30/03/2022. An industrial visit to Someshwar Sahakari Sakhar Karkhana provided practical insights for T Y B Sc students.



### Hands on training Workshop on Nanoparticle Synthesis:

Furthermore, a hands-on training workshop on Nanoparticle Synthesis was organized with Dr. Ashok Bankar, where students from chemistry, microbiology, and botany actively participated in theoretical sessions and practical synthesis exercises. A total of 94 students attended the nanoparticle synthesis workshop.



## Report of Department of Botany

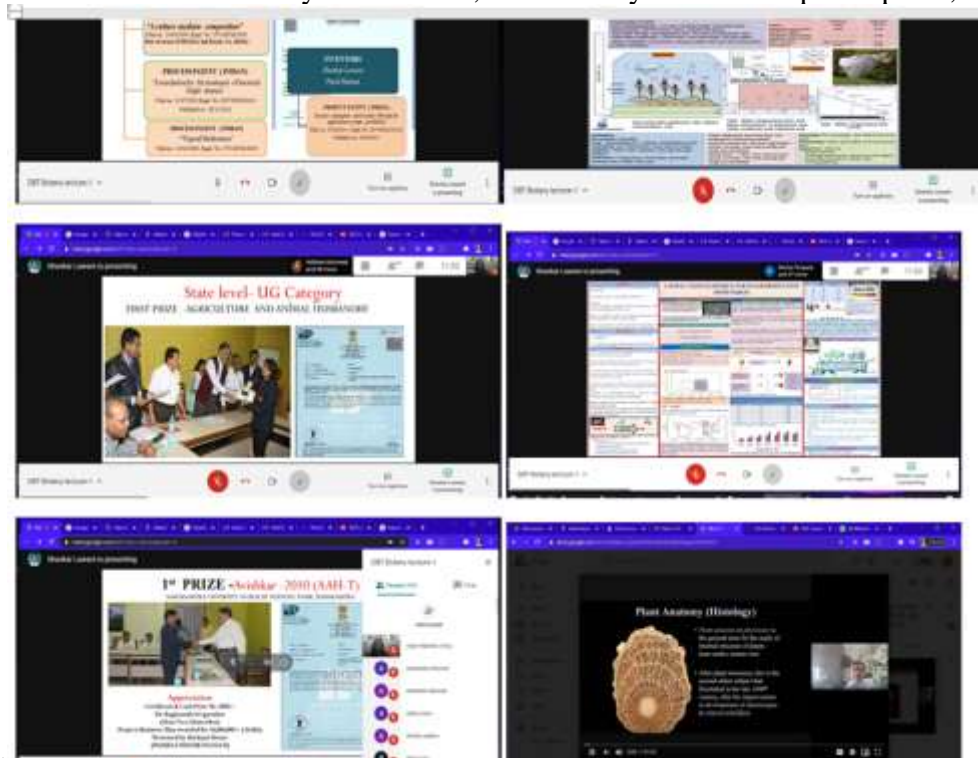
### Implementation of DBT STAR activities of the college (29-09-2020)

This workshop was conducted to get insight of how to implement programs under DBT STAR scheme. During this workshop our honorable guest speaker Dr. Kodam sir, who is professor in Biochemistry, Department of Chemistry, Savitribai Phule University has given nice guidance for implementation of grants under this program.



### Online guest lecture series in Botany (06-11-2020 -07-11-2020)

This online guest lecture series in Botany covered specialized topics, featuring speakers such as Prin. Dr. Shankar Laware from Mula Education Society, who motivated students to pursue ideas and dreams, encouraging innovative thinking. Dr. Ashok Tuwar discussed marine fungi biodiversity and research opportunities. Dr. K. S. Rajput highlighted the importance of plant anatomy in taxonomy and research, along with advanced techniques. Dr. Vikram Rawal from Gujarat Central University guided students on career opportunities in life sciences and Botany. The series, attended by a hundred participants, received



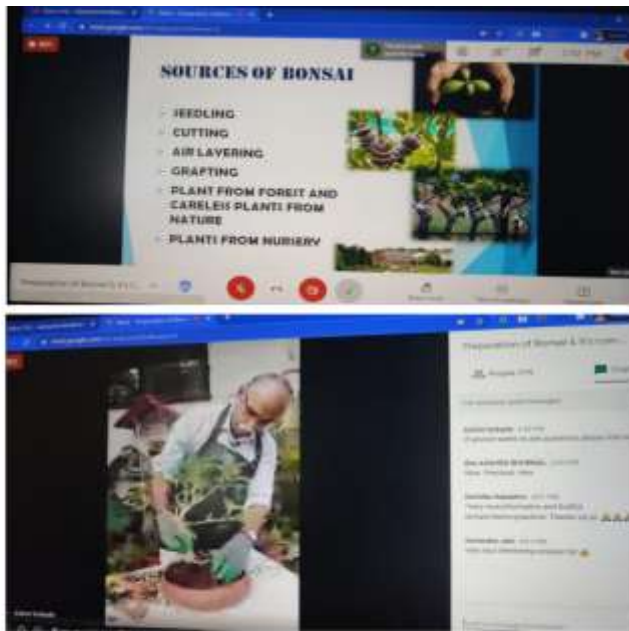
positive feedback online.

### Online workshop on Preparation of Bonsai & it's commercial values (14-12-2020)

This workshop is divided into first session theory of bonsai where he explained about what is mean by bonsai? From



where its is originated? Instruments, requirements and types of bonsai. In second session he covered practical online demonstration how to prepare bonsai and how to do repoting etc. It was very informative session around 273 students and teachers were participated from various institutes as well as our institution.



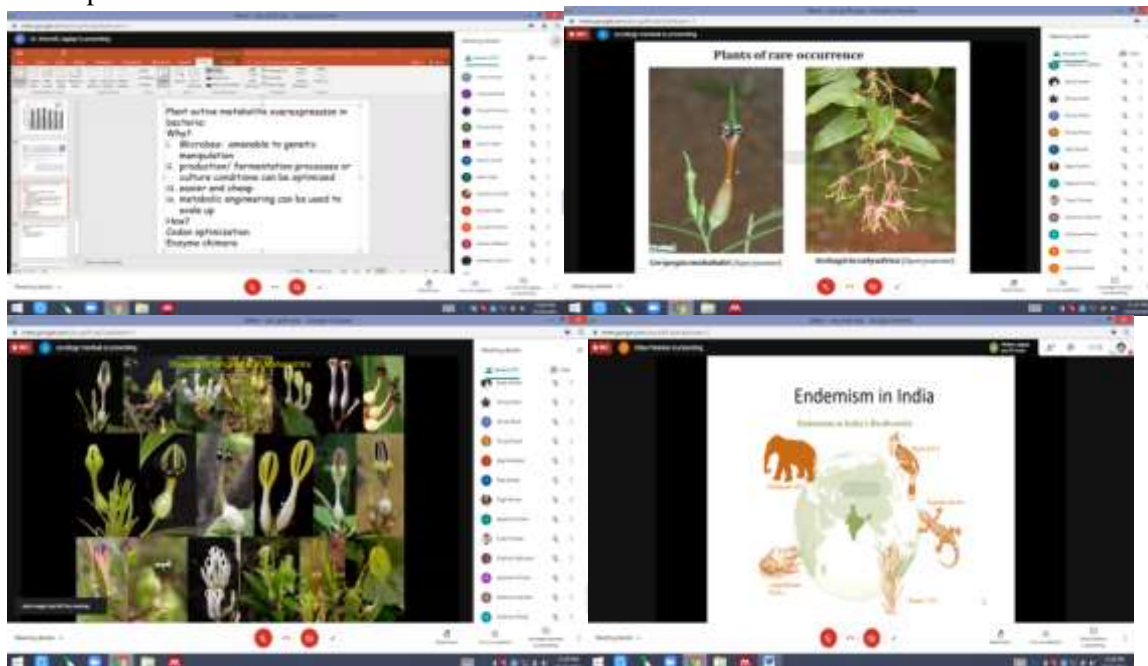
**BONSAI PREPARATION AND IT'S COMMERCIAL IMPORTANCE**  
(14<sup>th</sup> December 2020, at 02:00 PM)

Feedback link: <https://forms.gle/mzCgKWcxkrpAmlqk6>

You tube link of the event: [https://youtu.be/HnOJs\\_xZ8pM](https://youtu.be/HnOJs_xZ8pM)

**Online guest lecture series in Botany (31st January, 1 st and 2nd February 2021, at 11:30 AM Onwards)**

The first lecture by Dr. Sharmili Jagtap covered Microbial Techniques and the Industrial Importance of Microbial Enzymes. Dr. Sharad Kamabale discussed the Floral Diversity of the Northern Western Ghats, while Dr. B. C. Nagaraja, an Associate Professor at Bangalore University, provided valuable insights into Hotspot Biodiversity, Environment, and Climate Change. Mr. Yogesh Mahajan, Technical Officer at the National Chemical Laboratory, Pune, enlightened students on Horticulture, emphasizing its present scenario, importance, features, challenges, and career opportunities. These diverse topics and expert guidance aim to help students explore future prospects and career paths.



**Online Workshop on E-herbarium preparation Botany (30<sup>th</sup> Jan.2021)**

Dr. Mayur Nandikar, Senior Scientist at Naoroji Godrej Centre for Plant Research, Shirwal, Satara, conducted a workshop guiding students on the preparation of E-Herbarium—an advanced technique in Taxonomy. Dr. Nandikar provided comprehensive insights, covering basic to advanced information on Herbarium and E-Herbarium, along with discussions on career opportunities in E-Herbarium preparation. The workshop, attended by 100 participants, received positive feedback for its valuable content and guidance.



### Online Drawing Competition on World (Wetland Day Botany & Zoology on 2nd Feb 2021)

In celebration of World Wetland Day on February 2nd, the Department of Botany at PDEA's Waghere College organized an Online Drawing Competition focusing on various wetland-related subjects such as Wetland Habitat, Formation, Extinction, Bank, and Bottom. A total of 28 students participated, submitting their drawings in .pdf or .jpeg format.

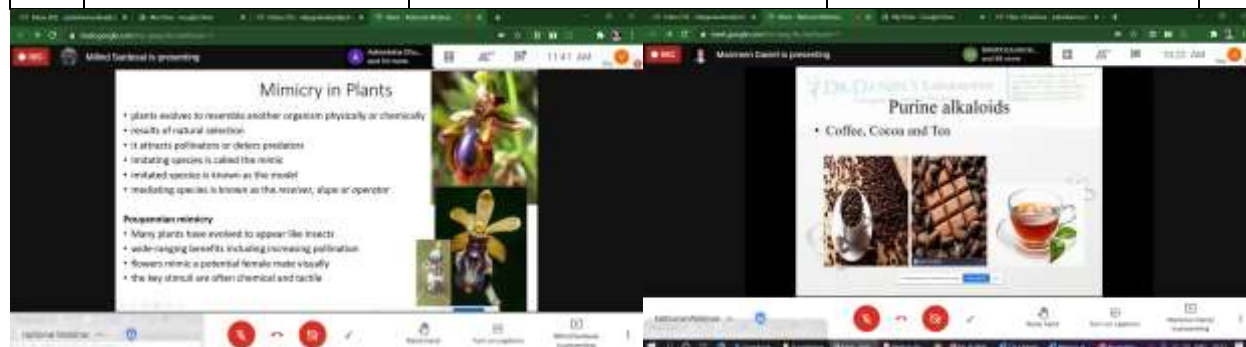
### Intercollegiate Quiz Competition Botany & Zoology

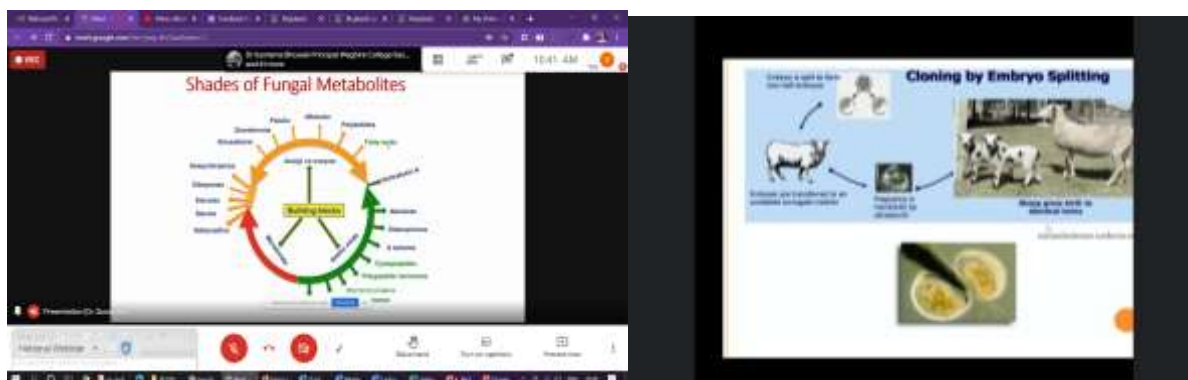
PDEA's Waghere College in Saswad, under the DBT-STAR College Scheme, organized an Intercollegiate Quiz Competition on Life Sciences, covering Botany and Zoology. The competition involved 25 questions sent via Google Form to students from various institutions. Kolekar Kiran Ramesh from Vidya Pratishthan's Arts, Science, and Commerce College, Baramati, emerged as the top scorer, receiving a prize for achieving a perfect score of 25 out of 25. E-certificates were awarded to all participants who scored above the passing threshold. A total of 386 students participated in this engaging competition.

### Online National Webinar on "Recent Trends in Plant Sciences"

Department of Botany has organized Online National Webinar Series in from 20th March, 2021 to 25th March, 2021 from 10.00 AM to 12.00 AM. The schedule of the program is given as follows,

Sr. No	Name of the Resource Person	Topic of the Webinar	Day & Date	Time and link
1.	Dr. M. M. Sardesai	Plant Taxonomy	Saturday, 20/03/2021	10.00 AM to 11.30 AM link: <a href="https://meet.google.com/tns-iywg-ktu">https://meet.google.com/tns-iywg-ktu</a>
2.	Dr. Daniel M.	Phytochemistry: Basics & Applications	Monday, 22/03/2021	
3.	Dr. Varsha Shirrama	Plant Tissues Culture	Tuesday, 23/03/2021	
4.	Dr. H. B. Sonawane	Fungi reservoir of metabolites and their applications	Wednesday, 24/03/2021	
5.	Dr. Gaurav Sanghvi	Cloning Techniques	Thursday, 25/03/2021	





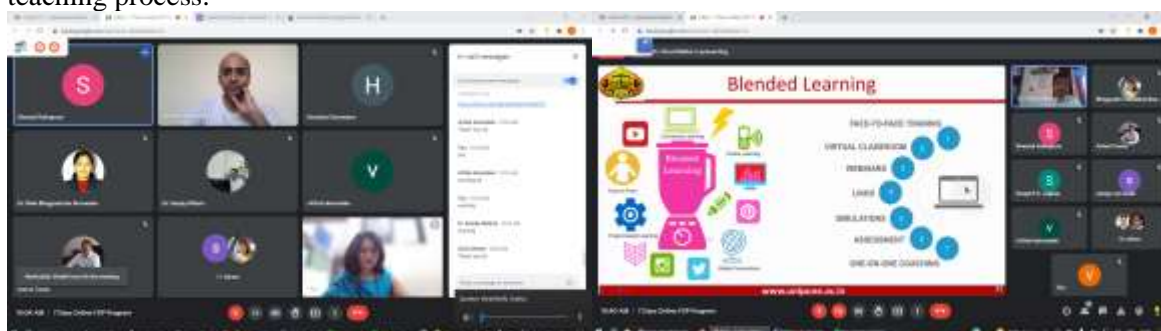
**“One Day training on Interactive panel use for advancement of teaching and learning” (12th March 2021, at 11:00 AM Onwards)**

This one-day workshop aimed to familiarize teachers with the applications of the Senses interactive panel, enhancing their understanding of its various functions for improved teaching and learning through ICT. Given the current pandemic scenario, advanced ICT tools are crucial for effective education. Sr. Engineer Pradhnya Kambale conducted the interactive and hands-on training session for 18 science faculty members, including heads of the Departments of Zoology, Microbiology, Botany, Chemistry, and Physics.



**Seven -day online faculty development program (FDP) on “enriching online teaching and learning”**

This FDP centers around "Enriching Online Teaching and Learning" with a focus on advancing knowledge and providing hands-on experience in using game-design, Excel, PowerPoint, and other software tools to enhance the teaching and learning process. The topics covered include Gamification for Learning and Development, Excel and PowerPoint advanced training, Moodle Training, supporting software for online teaching, effective online demonstrative teaching for Life Sciences, and Blended Learning. These approaches aim to enrich online education by combining traditional and online education systems, fostering interactive and effective pedagogy. Blended learning creates opportunities for online interaction alongside traditional classroom methods, contributing to an effective teaching process.



Waghire College of Arts Commerce & Science  
Savvad

On Occasion of  
50th foundation day of PDEA

Seven-Day Online Faculty  
Development Program (FDP)

On  
Mastering Online  
Teaching and Learning

15th – 21st September, 2021

Under  
DBT STAR COLLEGE SCHEME

Department of Botany  
in association with  
Faculty Development Centre  
UGC-HUMAN RESOURCE DEVELOPMENT  
CENTRE  
SAVITRIBAI PHULE PUNE UNIVERSITY

**Highlights of FDP  
Recourse Persons & Topics**

**Dr. Ravi Achaliya**  
Excel and Power point advance  
training for effective online teaching

**Dr. Manu Melvin Joy**  
Gamification For Learning and Development

**Dr. Vinod Malakar**  
Blended Learning

**Dr. Rajeev Ghode**  
Supporting software's for online teaching

**Dr. Nitin Patil**  
Moodle Training

**Dr. Prasanna Gadre**  
Effective Online Presentation

**Registration Free  
(Limited seats)**  
<https://forms.gle/aKwWjYAP9ZgH5WH28>  
kindly join the Whats App group after  
registration for further communication.  
**Whats App group link**  
<https://chat.whatsapp.com/HcMDG6Cn65X0kL5P6U1V4>

**For Certification from HRDC, SPPU**  
All sessions are compulsory to attend  
Complete the assignments  
After successfully completion of FDP  
Certificates will be provided to the participants  
which will considered for CAS Benefits

**Instructions**  
Please join the sessions with laptops  
for hands on training.

**Patrons**  
Hon. Shri. Aji Pawar  
Dy. Chief Minister Govt. of Maharashtra,  
President, PDEA, Pune  
Hon. Shri. Rajendra Ghodage  
Vice-President, PDEA, Pune  
Hon. Ady. Sandeep Karlam  
Hon. Secretary, PDEA, Pune  
Senate Member, SPPU, Pune  
Hon. Shri. Mohanrao Deshmukh  
Treasurer, PDEA, Pune  
Hon. Shri. L. M. Pawar  
Dy. Secretary, PDEA, Pune  
Hon. Shri. A. M. Jadhav  
Joint-Secretary (Admin.), PDEA, Pune

Prof. Dr. Sanjay Sonawane  
Director, Faculty Development Centre  
UGC-HRDC, SPPU, Pune

**Convener**  
Dr. Sandhana Bhanu (Principal)

**Co-convener**  
Dr. S. D. Jagdale (Vice-Principal)  
Dr. S. S. Washal (Vice-Principal)  
Dr. S. H. Zagade (OAC, coordinator)

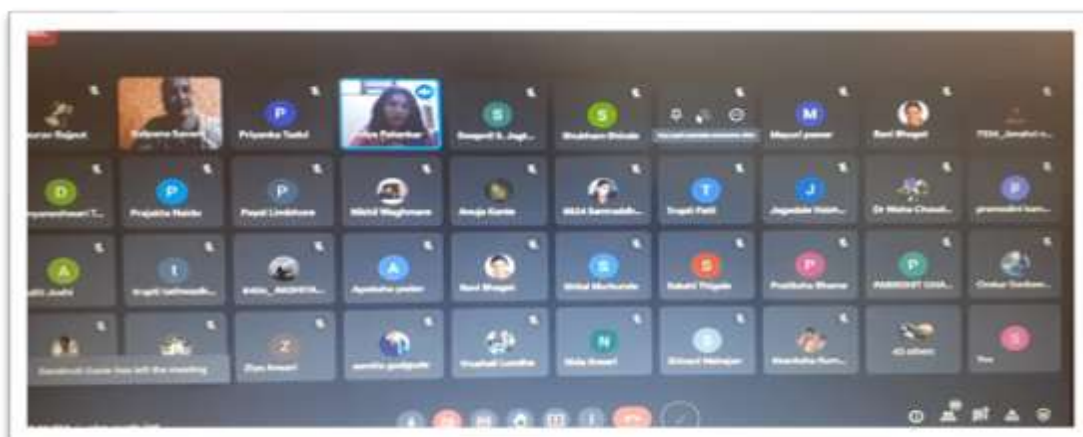
**Co-ordinator**  
Dr. V.V. Patankar

**Organising Committee**  
Prof. S. B. Bhugal (HOD, Physics)  
Prof. M. S. Shanwar (HOD, Microbiology)  
Dr. S. U. Mane (HOD, Zoology)  
Dr. M. M. Jagtap (HOD, Chemistry)  
Dr. S. S. Jagtap (HOD, Botany)  
Dr. S. A. Kulkarni (PGT)

**One day workshop on flower arrangements (15/11/2021):** The online one-day workshop featured Director Mrs. Kalpana Savant from Grand Academy of Savant Patil, (GRASP), Kolhapur, as the guest speaker. Mrs. Savant guided student participants through various concepts of flower arrangements, emphasizing its commercial importance and career prospects. The workshop included a detailed presentation during the first session, addressing queries, followed by hands-on training and demonstrations of various flower arrangements in the afternoon. The workshop garnered



positive feedback from 278 participants.



**One day workshop on Button mushroom cultivation**

**Visit to KVK, Baramati - Hydrponics, PTC, Plant pathology labs, Orchid cultivation, Apiculture unit etc.**

The study tour was organized to visit various labs of Krishi Vigyan Kendra (KVK), Baramati on 05/03/2022 for the F.Y. S.Y. and T.Y. B. Sc Botany.



centre of Fig and Custard apples

Visit to Aired zone Fruit Research



### Two days Handson workshop on Plant Tissue Culture (7<sup>th</sup> & 8<sup>th</sup> March 2022)

To celebrate National Science Day, we organized a Two-day Hands-on Workshop on Plant Tissue Culture. Dr. Pradnya Kedari, ex-Project Manager at Agarkar Research Institute, served as the guest speaker and demonstrator. The workshop covered techniques from basic to advanced, including Agrobacterium-mediated transformation. Dr. Kedari highlighted the importance of these skills in plant biotechnology and job opportunities. The workshop, attended by 47 students from TY, SY, and FY BSc Botany classes, involved theoretical sessions and hands-on training. The Botany department's six faculties actively participated, conducting experiments from media preparation to transformation and synthetic seed preparation.



### Two-day Seminar on IPR and Scientific writing"

Under the DBT STAR College Scheme, we conducted a "Two-day Seminar on IPR and Scientific Writing" on January 24th-25th, 2023, starting at 10:00 AM. Guest speakers Prin. Dr. Harish Tiwari and Prin. Dr. Sanjay Chakane addressed 76 participants, including faculty members and students from BSc TY, SY, and a few FY classes. Prin. Harish Tiwari covered the patenting process, while the other speaker focused on scientific writing and publication. Prin. Pandit Shelke emphasized the importance of research for publications and patent filing, motivating participants to generate patent ideas. We extend our gratitude to DBT for enabling us to organize such impactful seminars, workshops, and training programs.

Pune District Education Association's  
Waghire College of Arts, Commerce & Sciences  
Tal - Parandur, Dist - Pune, 411 001, Maharashtra  
NAAC Re-accredited: B++

Under DBT STAR College scheme  
**TWO DAYS SEMINAR**  
ON  
**IPR and SCIENTIFIC WRITING**

Date  
24<sup>th</sup>-25<sup>th</sup> Jan 2023  
Time 10.00 am to onwards

Resource person

**DBT-STAR College**  
Coordinator  
Dr. V. V. Patankar  
Co-Convenor  
Prof. S. B. Bhujbal  
Dr. S. D. Jagdale  
Dr. S. S. Wavhal  
(Vice-Principal)  
Convener  
Prin. Dr. P. N. Shelke

Prin. Dr. Harish Tiwari,  
PCCOE, Ravet Campus,  
Pune

Prin. Dr. Sanjay Chakane,  
T. J. College,  
Khadki, Pune.

DBT Star Scheme Departments  
Dr. B. U. Mane (HOD Zoology)    Dr. M. M. Jagtap (HOD Chemistry)    Dr. S. S. Jagtap (HOD Botany)

Prof. H. V. Sonawane (HOD Microbiology)



## Report of Department of Zoology

### Academic year 2022-2023:

During the academic year -2022-2023, The Zoology department had organized a Drawing competition themed “Umbrella and Keystone species of Ecosystem” on 6<sup>th</sup> October 2022; Collage painting competition on 10<sup>th</sup> October 2022 and Quiz and Puzzle activity for the F.Y.B.Sc and S.Y.B. Sc Zoology students on occasion of Wildlife Week Celebration on 6<sup>th</sup> October 2022. 31 students participated in the drawing competition; 31 students participated in Collage painting; 90 students and 99 students participated in Quiz and puzzle activity respectively. The competition’s main objective was to make the students aware about the existing condition of wildlife and students participation in conservation of wildlife at personal level.



Collage painting and Drawing representations done by students

Also, a Guest lecture on “Wild Life and Wild Life Photography” was organised by the Zoology department under the DBT Star college scheme on 10th October, 2022. Through this lecture, 89 students obtained knowledge on wild life, its ecological and economical importance. Also, students learned the nuances of Wild life Photography. 3 students from Zoology dept. participated in the Owl festival on 2<sup>nd</sup> December 2022.



**Shri. Prashant Borawake on “Wildlife and Wildlife Photography” on 10<sup>th</sup> Oct, 2022**

The Zoology department in collaboration with the Botany and Microbiology departments of Waghire College had organized two days workshop titled “Workshop on Life science” on 30<sup>th</sup> January and 31<sup>st</sup> January, 2023 under the DBT- STAR College scheme. Through the different talks on various topics related to Life science, around 131 students benefitted. During this workshop, eminent guest speakers like 1. Dr. S.L. Laware, Principal, ASC College, Sonai, Nevasa, Ahmednagar spoke on “Techniques in Biodiversity conservation”, 2. Dr. Aruna Bhambre, Principal, B. Ed College, Sonai, Nevasa, Ahmednagar spoke on “Environmental Awareness” and 3. Miss. Chaitali Kshirsagar, Director, MAESA Institute spoke on “Ecosystem” on 30<sup>th</sup> January 2023.



On 31<sup>st</sup> January, 2023, the second day of workshop, speakers like 1. Dr. Gulab D. Khedkar, Molecular Geneticist, Scientific Director of Paul Hebert Centre for DNA Barcoding, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad spoke on “Research Ethics”; 2. Dr. Laxmikant Shinde, Head and Professor, Zoology Department, JES College, Jalna spoke on “Billion Dollar Biological Threat- Mosquito” and 3. Dr. Narsingrao N. Bandela, Dept. of Environmental Science, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad spoke on “New Trends in Environmental Science”



**PDEA's**  
**Waghire College of Arts Commerce and Science,**  
**Saswad, Tal-Purandar, Dist-Pune**

**ACTIVITY REPORTS OF RECEIVABLE GRANTS (2022 and 2023)**

**DEPARTMENT OF BOTANY**

**Workshop on Aerobiological techniques (07<sup>th</sup> January 2022)**

The Aerobiological Techniques Workshop held on 07<sup>th</sup> January 2022 at Waghire College, Saswad was a comprehensive and insightful event focused on exploring various methodologies and technologies in the field of aerobiology. The workshop spanned 01 day, providing attendees with an intensive learning experience. The workshop was carried out in presence of Dr. Sudam Jogdand who is the student of Professor Tilak who invented Tilak air sampler. Total 30 students Participated in this workshop. Presenter shared invaluable insights from their research and field experience, enriching the workshop with diverse perspectives.



**WORKSHOP ON “ALGAE CULTURE” (15/01/2021)**

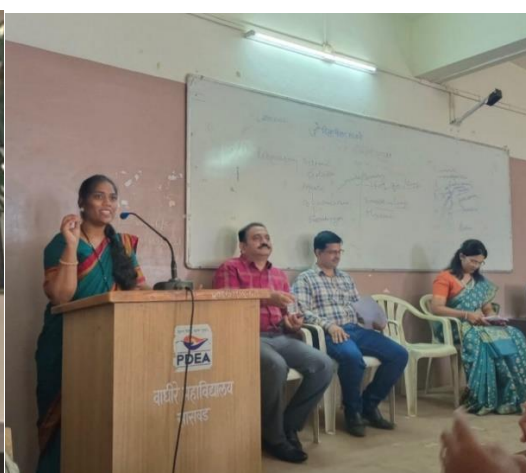
The Botany Department conducted a concise Algae Culture Workshop on January 15, 2021, involving 40 participants. Led by experts Dr. Vinayakk Lokhande and farmer Iyappan S, the workshop combined theory and hands-on demonstrations. Participants gained insights into algae biology, cultivation techniques, and practical applications. The success of the workshop was attributed to expert guidance and active participant involvement. Special emphasis was placed on Azolla culture for biofertilizer production.





### **Training program and workshop on “Ayurvedic Formulation” (25 Feb.2022)**

Mrs. Anuja Pandit conducted a one-day workshop on Ayurveda formulation, guiding students on principles like Rasa, Virya, and Vipaka. The workshop aimed to enhance understanding of Ayurvedic principles and empower participants to create herbal remedies. In the current scenario, Ayurvedic formulation presents a commercially viable and career-oriented opportunity. The hands-on session covered creating basic Ayurvedic formulations, with participants actively engaging and providing positive feedback.



### **Flower and Rangoli Competition (6-10-2022)**

The Botany Department, funded by the DBT STAR Scheme, organized a Flower Rangoli and Bouquet competition judged by an expert. The event took place on October 6, 2022, with enthusiastic participation from 48 students. The theme centered around flowers, celebrating the ancient art of Rangoli, reflecting Indian culture. Winners of the Rangoli competition were Zende Sharavani Balaso, Kumbharkar Jayanti Prakash, and Takawale Bhakti Pramod. Mayuri Jagtap, Zende Shravani Rohidas, and Nishad Roshani Bhushan were awarded for their excellence in the Bouquet competition.



### **Guest lecture I (28<sup>th</sup> and 29<sup>th</sup> June 2022)**

Prof. C.P. Hase from Baburaoji Gholap College delivered a lecture on "Plant Physiology," covering various aspects of plant structures and functions. The session included discussions on photosynthesis, respiration, mineral nutrition, and transportation in plants. The second session featured Mr. Rajkumar Pawar from ELA Foundation, who spoke on "Biodiversity Conservation," emphasizing the importance of biodiversity and its role in supporting life. Both lectures engaged 100 students, and the guests' answered questions from the participants, making the sessions informative and impactful.



### **Guest Lecture series (21-22/9/ 2021)**

Dr. R.B. Bhagat from Baburaoji Gholap College delivered a lecture on the Angiosperm Phylogeny Group (APG) and its significance in plant taxonomy. She explained the principles of APG I (1998), APG II (2003), and APG III (2016) with examples. In the second session, Mr. Prashant Borawake from Gram Seva Prathisthan spoke on "Environment Conservation," addressing current environmental issues and providing solutions for conservation and planet protection. The guest lecture series attracted 79 students, making both sessions informative and impactful.



### **TWO DAY'S WORKSHOP ON HORTICULTURAL TECHNIQUES (15<sup>th</sup> &16<sup>th</sup>April 2022)**

Mr. Anand Darveshi from Krushi Vigyan Kendra, Baramati, conducted a horticultural skills course, focusing on practical knowledge and real-world experience in plant cultivation. The workshop covered a range of horticultural practices, from basic to advanced, with an emphasis on sustainability. Participants, including fifty registered individuals, appreciated Mr. Anand Darveshi's guidance on horticultural methods, career prospects, and the benefits and challenges of agriculture in controlled environments. The workshop received positive feedback, particularly for its practical demonstrations and hands-on activities.



### **One day workshop on “Instrumentation techniques- Microscopic & Microtomy” (28/12/2021)**

Dr. Kishore Rajput and Mr. Ajeet from MS University, Baroda, conducted a one-day workshop on microscopic techniques and microtomy. The workshop covered various techniques such as SEM, TEM, and Cytofluorometry, emphasizing their importance and career prospects. The participants, totaling 50, benefited from the theoretical session with slide shows and interactive discussions. In the afternoon, hands-on training and demonstrations were provided for the microscopic techniques. Mr. Ajeet explained the significance of microtomy, detailing the microtome's role in preparing biological samples for microscopic examination. The participants expressed satisfaction, and both experts addressed queries effectively, receiving positive feedback for the workshop.



### **Training program on “MUSHROOM CULTIVATION” 16/07/2022**

Dr. Suresh Naidu, an international consultant in Button Mushroom Technologies, conducted a one-day workshop, enlightening students on button mushroom cultivation techniques, business prospects, and nutritional values. The sessions covered various aspects, including substrate preparation, inoculation methods, and disease management. The workshop highlighted the commercial significance and career opportunities in mushroom cultivation. The interactive hands-on training provided detailed insights into cultivation practices. A total of 50 participants attended, expressing positive feedback and showing interest in pursuing mushroom cultivation as a business. The workshop successfully conveyed practical knowledge and business insights to the participants.



### **Hands on Workshop on Preparation of Herbal Cosmetics (04<sup>th</sup> October 2021)**

Considering overall well-being, holistic approaches to beauty are common in herbal cosmetics. Sustainability, is a frequent technique in the cultivation of plants and herbs used in cosmetics, reducing the environmental impact of the cosmetics industry. This reflects the growing desire for ethical and cruelty-free cosmetics. Botany Department organized workshop on “Preparation of Herbal Cosmetics” on 04<sup>th</sup> October 2021 for F.Y, S.Y & T.Y students. Workshop was started at 10;00 am and was carried out under the presence of our guests Dr. Priyadarshani Kadus & Dr. Atul

Kapadia. Total 25 students were participated in this workshop. Students prepared Herbal Serum, herbal face packs, etc. The students' interest in herbal cosmetics increased significantly as a result of this workshop.



### Science Exhibition and Start-up Project Competition 2021:

Under the DBT STAR College scheme, a Science Exhibition and Startup Project Competition were held on 16/12/2021, providing students with a platform to showcase their innovative ideas and startup projects. Prof. Atishkumar Gavit inaugurated the event, and internal examination was overseen by Dr. B. U. Mane from the Zoology department. Despite COVID-19 constraints, 18 projects were demonstrated physically, adhering to government guidelines. Out of 50 entries, winners were announced, with Pooja Katare and Rutuja Malkar securing the 1st Prize, Shweta Phadtare the 2nd Prize, and Chaitanya Randive and Tufel Mulani the 3rd Prize.



### Workshop on preparation of Bonsai (06<sup>th</sup> October 2021)

An enthusiastic group of people from a variety of backgrounds attended the well-received bonsai preparation workshop that took place on 06<sup>th</sup> October 2021 at Waghire College of Arts, Commerce & Science, ready to learn more about the craft of bonsai cultivation. The objective of the workshop was to impart theoretical knowledge and practical expertise in the art of making and caring for bonsai trees. This workshop was carried out by Ms. Shailaja

Kapila. Total 30 students were participated in this workshop from class F.Y, S.Y, T.Y & M.Sc. Botany. The Bonsai Preparation Workshop proved to be a successful endeavor, providing participants with the knowledge and skills needed to embark on their bonsai journey.



### **Workshop on Preparation of Herbal Cosmetics (02<sup>nd</sup> July 2022)**

The Botany Department conducted a workshop on "Preparation of Herbal Cosmetics" on 02<sup>nd</sup> July 2022, emphasizing the holistic and sustainable approach of herbal cosmetics. Dr. Vijay Gadgil and Dr. Asmita Jadhav were the workshop guests, engaging 25 students from F.Y, S.Y, and T.Y. The participants actively prepared items such as Herbal Hair dye and Herbal Hair Shampoo, fostering a keen interest in Herbal Cosmetics among the students.



### **Two days Hands on Workshop on Aerobiological techniques (28<sup>th</sup> & 29<sup>th</sup> March 2023)**

The Botany Department conducted a two-day Hands-on Workshop on Aerobiological Techniques on March 28th and 29th, 2023. The workshop covered air sampling, pollen monitoring, spore identification, and data analysis. Mr. Akshay Shete led the practical demonstrations, engaging 30 students. Participants actively participated in hands-on sessions, gaining practical experience with various equipment and methodologies discussed in theoretical sessions.



## WORKSHOP ON

### ALGAE CULTURE (6/08/2022)

The Botany Department conducted a workshop on micro-algae culture on August 6, 2022, with the participation of 35 students. Dr. Manisha Sangale and Mr. Krishikesh Khadde delivered lectures, offering theoretical knowledge and hands-on experience in algae cultivation. The workshop covered essential aspects of algae biology, emphasizing ecological significance and applications. Practical sessions allowed participants to set up and manage algae cultures, promoting a deeper understanding. The interactive environment facilitated student engagement and interaction with experts, making the Algae Culture Workshop a valuable educational experience.



### Training program and workshop on “Ayurvedic Formulation” 22 April.2022

A one-day session on Ayurvedic formulation was conducted, where the first session focused on Dr. Suresh Naidu guiding students through Ayurvedic formulation techniques, emphasizing concepts of Rasa, Virya, and Vipaka. The workshop aimed to enhance participants' understanding of Ayurvedic principles and practices related to herbal treatments. A total of 50 participants attended the session, providing positive feedback.



### **WORKSHOP ON HERBARIUM PREPERATION (1/05/2022)**

Preparation of Herbarium is an advance technique in Taxonomy and it's important in present scenario. On this background, Dr. Nandikar has guided the students from basic to advance information in Herbarium preparation as well as career opportunities in Herbarium preparation. Sir gave some ideas regarding Herbarium preparation of regional flora of Purandar. 50 participants have joined for this workshop and gave their positive feedback regarding the same.

### **WORKSHOP ON HORTICULTURAL TECHNIQUES (15<sup>th</sup>February 2022)**

In the horticultural techniques workshop, Dr. B.M. Shinde from Annasaheb Waghire College, Otur, guided students on practical aspects of plant cultivation. The focus was on sustainable methods applicable in diverse horticultural settings. Dr. Shinde provided insights from basic to advanced information in horticultural techniques, emphasizing career opportunities. The workshop attracted 50 participants who appreciated the hands-on activities and practical demonstrations, expressing satisfaction with the discussions on the benefits and challenges of controlled environment agriculture.



### **Training Program in Plant Tissue Culture (19/4/2022)**

The Botany Department organized a one-day Plant Tissue Culture training program, covering basic to advanced techniques, including Agrobacterium-mediated transformation. Dr. Varsha Shiram, an expert from Ramkrishna More Mahavidyalaya, Akurdi, discussed the current scenario and job opportunities in plant tissue culture. The workshop had 50 student participants, hands-on training, and active involvement from all six Botany faculty members. It included theoretical sessions, hands-on experiments, and practical sessions on transformation and synthetic seed preparation conducted by students the following day.





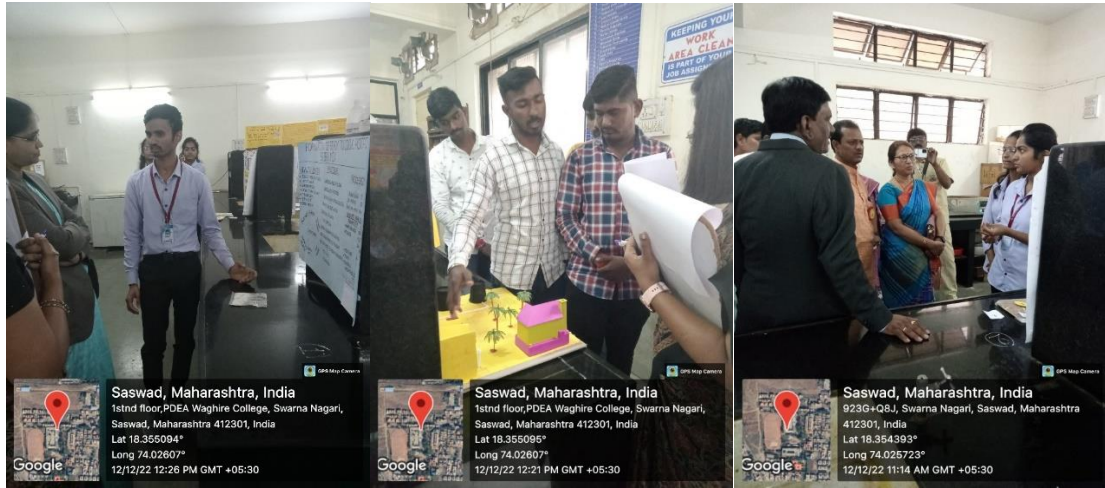
### **Hands on training for Mame Bonsai preparation (06<sup>th</sup> July 2022)**

At the well-received bonsai preparation session held on July 06, 2022, at Waghi College of Arts, Commerce & Science, a diverse collection of enthusiastic individuals eager to learn more about the art of bonsai care showed up. The workshop's goal was to transfer theoretical understanding and hands-on skill in the art of creating and maintaining bonsai trees. This workshop was carried out by Dr. Erach Bharucha. Total 30 students were participated in this workshop from class F. Y, S.Y, T.Y & M.Sc. Botany. The Bonsai Preparation Workshop was a great success, giving participants the information and abilities, they needed to start their bonsai journey.



### **Science Exhibition and Startup Competition (12/12/2022)**

Under the DBT STAR College scheme, a Science Exhibition and Startup Competition were organized on 12/12/2022 for undergraduate and postgraduate students. The event was inaugurated by Balasaheb Bhintade, the city president of Rashtrawadi Congress. Prof. Pradnya Jagtap and Dr. V. V. Patankar served as external and internal examiners, respectively, with the presence of HODs, faculty, and the vice-principal. Out of 44 entries, 23 ideas were presented for the science exhibition. Six startup projects were showcased, and the winners were: 1st Prize: Kadbane Sakshi and Kalange Shreya (Innovation and Product: Puranpoli premix), 2nd Prize: Jagtap Bhavna S. (3D Hologram) Balgude Supriya and Priyanka Gaikwad (Bioplastic preparation from Banana peel), 3rd Prize: Jagdale Vaishnavi and Megha Manu (Easy seeds), Consolation Prize: Botre Neha Namdev and Kolte Tanuja (Innovation idea for the preparation of Temph from Soybean seeds).



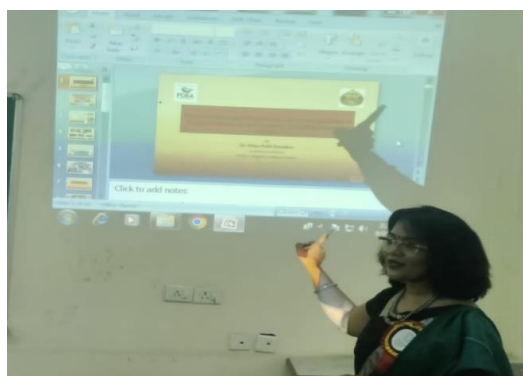
## Seed germplasm conservation 9<sup>th</sup> May 2022

The Dr.  
Germplasm co  
Germplasm e:  
Gourav Pratis  
the students  
Exhibition of  
of the Native  
importance of  
Dr.V.V. Patar  
was present fo

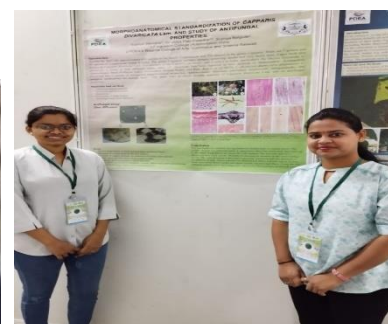


**Paper and Poster presentation  
visit to Saifabad College, Osmania University, Hyderabad**

Undergraduate and post graduate students were participated after finishing their research project assigned under DBT Star scheme. They presented their research work at the conference out of 5 students Ms. Prajкта Kulkarni and Preeti had awarded Best Poster Presentation award. Dr. Vidya Patankar presented the work which was carried out during implementation which was also awarded with best oral presentation award at International Conference on Recent Innovation in Science and Technology-2023.



**Participation of students of undergraduate and Research students in International Symposium on Sustainable Environment and Smart Technology (10-11<sup>th</sup> March 2023)**



**DEPARTMENT OF ZOOLOGY**

**Academic year- 2021-2022:**

1. During the year 2021-2022, the department organised one- day lecture on Basic

entomology. During the lecture Ms. Nikita Saste spoke on entomology like what is entomology, what is the role of different insects in human's life, the beneficial and harmful insects, the basic difference between the insects and the arachnids, the difference between a butterfly and a moth. Importance of bees, butterflies and moths as pollinators etc. Around 41 Students benefitted from the above lecture.

2. Prof. S.A. Kokare and Dr. Madbhavikar conducted a one- day biodiversity survey of the Kadjai Vanrai, Chambli village; Tal. Purandar on 30<sup>th</sup> Dec, 2021 wherein total of 09 invertebrate animal species, 01 Reptilian species; 29 bird species and 01 mammalian species in the scrub –arid grassland area of the Vanrai.

### **Academic year 2022-2023:**

1. During the academic year -2022-2023, The Zoology department had organized a a guest lecture on Basic Entomology on 12/9/2022 for the F.Y. and S.Y. B. Sc. Zoology students from 10.00 am to 12.00 noon. The speaker for the lecture was Mr. Pandurang Madane, He explained through various examples how the wild animals like snakes, foxes, rabbits, hyena, birds etc. lose their lives while crossing the road in the villages or forest region adjoining the villages at night time. Since proper help does not reach them on time and also due to lack of proper medical knowledge for primary treating of the wildlife, many animals succumb to death. He explained how certain precautionary measures taken by the people like calling a veterinary doctor, forest officials and police; putting a cloth on the injured animal to calm or soothe it; tying a torque around the animal's injured body part can save the life of a wild animal. 50 Students benefitted from the above lecture.



2. The Department of Zoology had organized a Guest lecture on Wildlife on 13/10/2022

in the Zoology Laboratory from 11.00 am to 2.00 pm for F.Y.B. Sc and S.Y.B. Sc students. The speakers of the guest lecture were Dr. Suruchi Pande, Vice Chairman of Ela Foundation and Head of Nilkanth Joshi Lab of Ethno-biology of Ela Foundation; Shri. Rajkumar Pawar, Coordinator of Ela Habitat, Pingori and Dr. Murlidhar Mahajan, Environment conservationist. During the Guest lecture on Wildlife, Dr. Suruchi Pande spoke on “Indian Religious Festivals-Forgotten nature, Conservation values and Wildlife crimes”. She spoke about how all the festivals falling in different months of the year in our Indian culture serve as conservation strategies with regards to the wildlife. Shri Rajkumar Pawar spoke “Our Surrounding and Wildlife Conservation”. He spoke on how one needs to be vigilant and contribute even in slightest way in wildlife conservation through different examples. While Dr. Murlidhar Mahajan spoke on “Students- The major contributor in wildlife conservation”. He emphasized on how students can bring about a major change in wildlife preservation when taught the importance of wildlife. The whole family of the student also is indirectly involved in conservation when a student seriously gets involved in wildlife conservation. From these lectures, 49 students from both the classes benefited.



3. A guest lecture on Basics of Apiculture on 22/9/2022 for the students of S.Y.B. Sc. Zoology from 9.00 am to 3.00 pm. The main objective of organizing this lecture was to make the student understand the basic part of Apiculture like different types of honeybees used in apiculture, their habits and nesting behavior, the ecological role played by honeybees, the importance of honeybees in human’s life, the different equipment’s used in rearing, the products obtained from honeybees, the economics involved and the skill based employment provided by apiculture. Guest speakers invited were Mr. Prashant Gawade and Mr. Alpesh Shah from Kendriya Vidnyan Kendra, Malegaon Budruk, Tehsil Baramati. 30 students benefitted from this lecture.



4. A workshop on Demo practical's related to Extraction of different honeybee products on 25/11/2022 for the students of S.Y.B. Sc. Zoology from 10.00 am to 3.00 pm. The main objective of organizing this lecture was to make the student understand the extraction process used for extracting honeybee products like honey, beewax, pollens, propolis and royal jelly. Mr. Sachin Kshirsagar and Manoj Gawade from the Kendriya Vidnyan Kendra Baramati showed the different equipments used for the extraction process and explained how it is carried out without causing any damage to the bees by using the equipments. They also showed the different products brought from their institution to the students. They emphasized that Apiculture provides not just self- employment to students but also can be used for pollination in farms by lending the bee boxes to the interested farmers at a price. 51 students were benefitted.





5. The Zoology department had organized a visit for F.Y.B.Sc. and S.Y.B.Sc Zoology students to the Vermicompost unit of Gram Gaurav Pratisthan, a Non- Government Organization located in Khalad village of Purandar Tehsil on 02/11/2022. The visit was organized so as to the make the concept clear to the students with regards to the Vermiculture and Vermicomposting. The NGO is established in a 10 acre area and as a part utilized for Vermicompost unit. It has two Vermicompost beds of 6ftx 3ft containing the Vermicompost in it. Mr. Yogesh Magar and Mr. Prashant Borawake explained the students the entire process right from the construction of bed, the cost incurred to the marketing of Vermicompost. They explained the earthworm species (*Eisenia foetida*), its breeding process and its habits. They also explained the entire process of Vermiculture and that Vermicompost formation takes place in 90-120 days. They also explained the usefulness of Vermicompost and vermishash to the assembled students. 46 students observed the Vermicompost unit.



6. Department had organized Eight days Lecture series titled “Vector Borne Diseases and Water Borne Diseases its Control” on 2<sup>nd</sup> to 10<sup>th</sup> January, 2023 under the DBT- STAR

College scheme. During this lecture series, eminent guest speaker Dr. Vinod G. Sutaone on vector borne and water borne diseases like Chikungunya, Malaria, Dengue, Filaria etc.



7. The Zoology department had organized a guest lecture on Vermicomposting on 15/03/2023 for the students of F.Y.B. Sc. and S.Y. B.Sc. Zoology from 9.30 am to 1.30 pm. The main objective of organizing this lecture was to make the student understand the importance of vermicomposting in agricultural use. Vermicompost is a natural product obtained from earthworms. It enhances plant growth and causes maximum yield in plants. Vermicomposting provides self – employment too. Mr. Prashant Borawake, Environmentalist and Coordinator of Paani Panchayat NGO explained to the students, the different types of earthworms, the useful species observed in Saswad, vermicomposting process, the vermicompost bed and benefits of using the vermiwash and vermicompost in farming and gardening instead of inorganic fertilisers. 46 students benefitted from this lecture.
8. The Zoology department had organized a guest lecture on Basic Entomology on 25/4/2023 for the F.Y. and S.Y. B. Sc. Zoology students. The speaker for the lecture was Mr. Dattatray Murkute, a Wildlife Conservationist and Snake rescuer. The main objective of organizing this lecture was to make the student understand the difference between the venomous and non-venomous snakes, the identification of these snakes, characteristic features of certain venomous snakes found in Purandar tehsil, the basic precautionary measures while moving in snake occurring areas like grasslands, garbage dumping grounds, forests etc. the difference between the snake bites based on wound marks and the necessary first aid treatment measures to be taken after the snake bites. 48 students were benefitted from this lecture.





## DEPARTMENT OF MICROBIOLOGY

Academic year 2021-22

After the COVID situation it was realized worldwide the importance of general health and hygiene, therefore for creating health awareness among our major stakeholders i.e. parents of our students, an activity was planned. Basically, our students are coming from rural regions and their parents are mostly farmers. So, on 20<sup>th</sup> Oct 2021, the department of microbiology had organized a medical checkup activity and to guide them to maintain hygienic conditions to avoid CORONA. During this CORONA pandemic it became important to maintain our blood sugar level, Hb content, to monitor blood pressure and O<sub>2</sub> level regularly. So, when we had invited parents for PTA meet, we organized a health awareness camp at college level. In this camp checking of blood group, blood pressure, ECG, blood sugar level and O<sub>2</sub> level, was arranged so that necessary measures could be taken for those who were showing some kind of abnormalities. Especially some mothers who were deficient of Hb, they were provided with Iron tablets.



Saswad Municipal Corporation had organized Swachh Technology challenge competition under Swachh Bharat Abhiyan by Ministry of Housing and Urban Affairs Government of India on 4<sup>th</sup> January 2022. The competition was open for all sectors. Different themes under this programme were Garbage waste management, Plastic waste management, Clean Saswad city, Arboriculture and Environment protection, Rain water

harvesting, Garbage free and open defecation free Saswad and Personal hygiene and health.

The purpose of this competition was to involve the citizens into campaign of Swachha Bharat Abiyan and an innovative thought came out for developing the dream of Swachha Bharat.

One of the Staff member Ms. Supriya Rane participated in Swachha Startup challenge and got first prize.

T.Y.B.Sc. Microbiology students also had participated in this competition and among which following students got prize in this competition.

- 1) Sakshi Wagh
- 2) Dhanashri Jagtap
- 3) Kajal Singh

For this competition students had prepared posters and models under DBT STAR Scheme.



Gynaecological health check-up camp was organised by the department of Microbiology in collaboration with Shree maternity Nursing Home, Karvenagar, Pune for the teaching and administration staff members (ladies) on 31<sup>st</sup> March 2022, at 10.00am. We organised this programme to

make aware of the importance of regular health check-up. Regular health check-ups have several benefits for women that helps to detect any serious health conditions before the situation worsens.

Dr. Sunita Kale, Director, Shree maternity Nursing Home, Karvenagar, Pune said in her speech that women perform multiple tasks in today's world. They are not only homemakers but also career women playing different roles. However, with such a hectic routine and a fast-paced lifestyle, they hardly find the time to look after their health and self-care. She tried to convince that regular [healthcheck-ups](#) and better management of diet and lifestyle help to ensure a healthy, active life. Regular health check-up helps to detect life-threatening diseases, such as breast, cervical or ovarian cancer and to provide timely medical treatment.

Our lady staff members, both teaching and administration, were benefitted of this activity. They could get answers to various menstrual, menopausal problems. All these ladies staff members (30) were happy to attend this workshop, as it was one of a kind they had never experienced.



### Academic year 2022-23



We had repeated the hands-on training program, 'Chromatographic Techniques and Basic Techniques in Molecular Biology' for our T.Y.B.Sc. students. The program was organized on 3<sup>rd</sup> and 4<sup>th</sup> Oct 2022, in collaboration with MaheIntern and E-cell IIT, Kharagpur. They had arranged two faculties Dr. Devika Bannerjee for

Chromatographic techniques and Dr. Chinmoy Patra for Molecular Biology Techniques. Fifty-four students were benefitted of this activity. They could get hands on experience of the techniques they basically learn in their theory courses.

On 8<sup>th</sup> Mar 2023 to celebrate International Womens' Day, the department of Microbiology had organised the gynaecological health check-up camp in collaboration with Shree maternity Nursing Home, Karvenagar, Pune for our girl students, on 8<sup>th</sup>March 2023, at 10.00am. We organised this programme to create awareness of the importance of regular health check-up. Nowadays, PCOS a significant public health problem and is one of the commonest hormonal disturbances affecting women of reproductive age. Up to 70% of affected women remain undiagnosed worldwide. Therefore, organising such camps was very essential. Dr. Sunita

Kale, Director, Shree maternity Nursing Home, also guided girls in her speech. She told that even if you feel fine, you should still see your provider for regular checkups. These visits can help you to avoid problems in the future. PCOS is the commonest cause of an ovulation and a leading cause of infertility. It is associated with a variety of long-term health problems that affect physical and emotional wellbeing. There's no cure for PCOS, but there are several ways to treat and manage it. She tried to convince that regular health check-ups and better management of diet and lifestyle help to ensure a healthy, active life. Regular health check-up helps to detect life-threatening diseases, such as breast, cervical or ovarian cancer and to provide timely medical treatment.

Our girl students who are mainly from rural background are very shy types and would not discuss their gynaecological issues with their parents also. But when they attended this camp, they got answers to many of their unasked questions.



The department of Microbiology had organized two days training program for T.Y.B.Sc. Students on 9<sup>th</sup> and 10<sup>th</sup> March 2023. It was organized in collaboration with Mahatma Phule College, Pimpri. T.Y.B.Sc.

Dr. Sangita Ahiwale is the person in this field who could guide step by step in Bacteriophage cultivation. The novel use of bacteriophages in treating certain infections caused by antibiotic resistant organisms was introduced by our guest. Fifty-four T. Y.B. Sc. students participated in the training session.

## **DEPARTMENT OF CHEMISTRY**

### **Hands on Training on Spectrophotometry (2021-2022)**

Under DBT Star College Scheme, The department of Chemistry had organized Hands on training programme on Spectrophotometry for T Y B Sc students. In this training workshop students learn about the fundamental basic principle of spectrophotometry, laws of spectrophotometry, and applications of spectrophotometry in chemical analysis. Students also learn about the preparation of samples for spectrophotometry and their analysis, students practiced the practical handling of instruments individually. For this hands on training programme 50 - T Y B Sc students participated. The hands on training programme is organized in collaboration with SGRS

College of Pharmacy Saswad and Prof. Dr. Ganesh Nigade delivered the demonstration on spectrophotometry to students.



#### **Hands on training on Flame Photometry:**

Under DBT star college scheme, the department of Chemistry organized another hands on training programme on flame photometry in collaboration with SGRS college of Pharmacy, Saswad. For this workshop Dr. Vaibhav Shalimar was invited as a Resource Person and he explained and demonstration in details about Flame photometry. In this hands on training programme, students learns and understand the basic principles of flame photometry and general applications of flame photometry. Students also know, how to use the flame photometry for identification of Na, K and Ca like metals and their analysis. Near about 50 T Y B Sc Chemistry students participated for this Hands on Training Programme on Flame Photometry.



#### **Workshop on Perfume Synthesis:**

Under DBT Star College Scheme, The department of Chemistry also organized workshop on

Perfume Synthesis for this workshop Prof. Dr. Fazzil Shaikh, Department of Chemistry, Poona College, Pune was invited as a resource person. He delivered excellent and simple method of preparation of perfume. For this workshop 50 S Y B Sc students participated. From this workshop students know how to synthesize perfumes, dilution and composition of chemicals for preparation of perfumes etc.



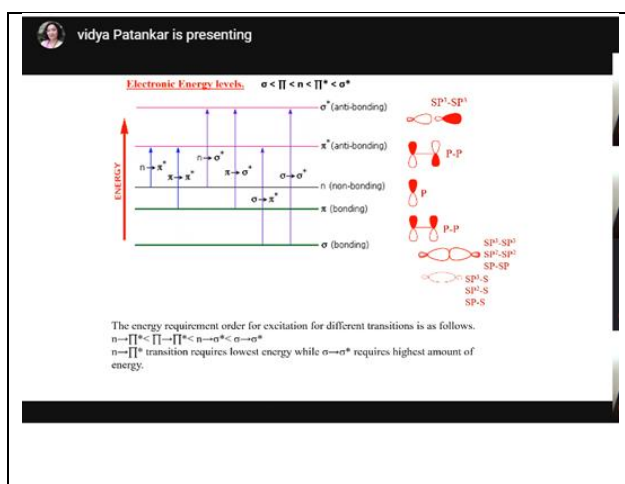
#### **Workshop on Sanitizer and Hand wash Making:**

The Department of chemistry also organized workshop on Sanitizer and Hand wash making under DBT Star College Scheme for T Y B Sc Chemistry Students. For this workshop Dr. fazzal Shaikh was invited as a resource person. He explained a very simple method for preparation of alcohol based hand sanitizer. Students learns and understand the important ingredients for making hand sanitizer such as Isopropyl alcohol, Alove Vera gel, Lemon Juce etc. for making an effective hand sanitizer the alcohol and alove vera proportion must be fix 2:1 proportion and for fragrance Lemon Juice is also added. Students make hand sanitizer and used for hand cleaning. Students also know how to use hand sanitizer. Students also learns use of hand sanitizer help finish a wide range of disease or pathogens on hands, including the SARS-CoV-2, coronavirus etc. The students also learns the importance hand sanitizer and hand wash to prevent coronavirus. For this workshop near about 50 T Y B Sc students are actively participated.



### Guest Lectures on Spectroscopy:

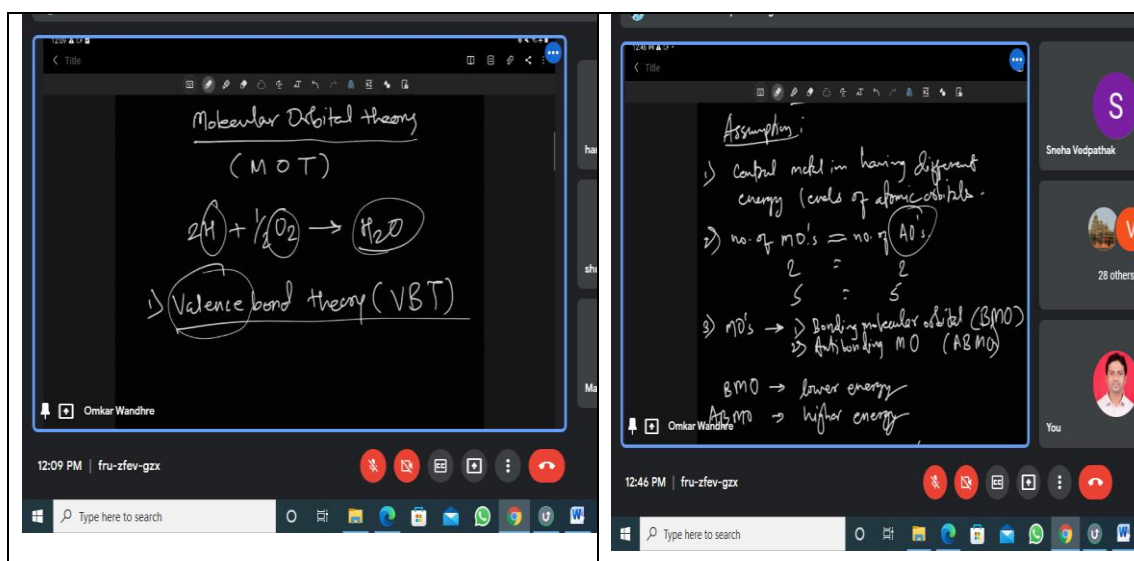
The Department of Chemistry also organized the guest lecture on Spectroscopy under DBT Star College, Scheme. For this guest lecture Dr. Sangeeta Jagtap, Department of Chemistry, BG College, Sanghavi, invited as a Resource Person. Dr. Sangeeta Jagtap delivered an excellent talk on Spectroscopy. Students learn and understand what is spectroscopy, basic principle of spectroscopy, electromagnetic radiation, electromagnetic spectrum, energy levels of molecules, Intensity of spectral lines, selection rules and Spectral analysis of data etc. For this guest lecture 50 students of T Y B Sc present.



### Guest Lecture on Co-ordination Chemistry:

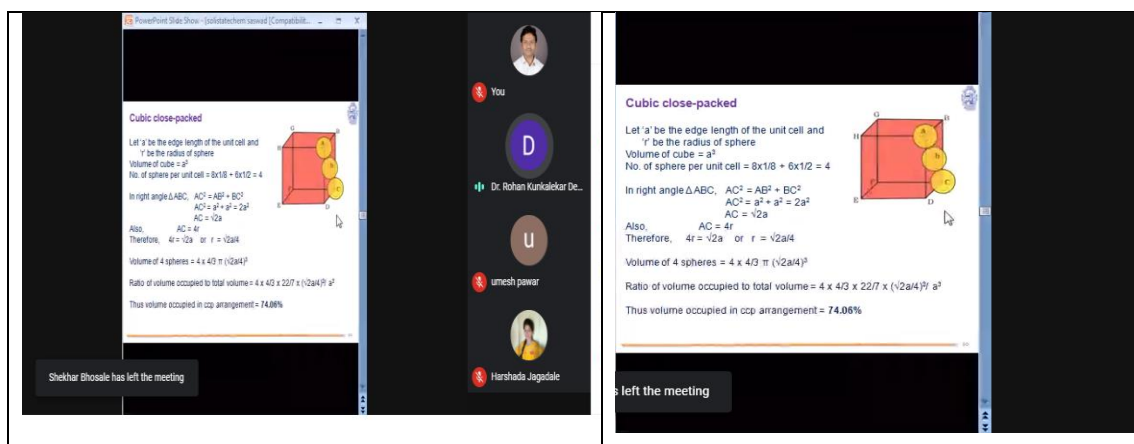
Under DBT STAR college scheme, Department of Chemistry organized guest lecture on Co-ordination Chemistry. For this guest lecture Prof Wandhare D M, Amruteshwar college, was invited as a resource person. He discussed fundamentals of Co-ordination chemistry, difference between double salt and coordination complex, Werners Co-ordination theory, CFT, VBT and MOT with suitable examples. Students are able to learn and differentiate the uses of VBT, CFT and MOT for studying the coordination complexes. For this workshop 50

T Y B Sc students presents.



### Guest Lecture on Crystal Structure:

The department of chemistry organized guest lecture on Crystal Structure for T Y B Sc students. For this guest lecture Dr. S K Nikam, Associate Professor, Department of Chemistry, A T College, Bhor, Pune was invited as Resource Person. He gave elaborative lecture on various points including Introduction to Crystal structure, amorphous and crystalline solid, Polymorphism, Laws of crystallography, Crystal structure, Braggs Equation, and their application etc. Students are able to understand the differentiation between Amorphous and Crystalline solid, laws of crystallography, Weiss Indices and Miller Indices and their calculations, Braggs Equations, Calculation of no. of atoms per unit cell of Cubic lattice, Body centered lattice, and face centered Lattice etc. For this lecture 50 students of T Y B Sc class were present.



### Guest Lecture on Rearrangement Reactions:

Under DBT star college scheme, the department of chemistry also organized guest lecture on Rearrangement Reactions. For this lecture on rearrangement reactions Dr. Hari Pawar,





**Guest Lecture on Stereochemistry:**

The Department of Chemistry organized guest lecture on stereochemistry for the students of First Year B.Sc. For this lecture Prof. S B Dhotre, Associate professor, Department of Chemistry, Annasaheb Magar College, Hadapsar, Pune was invited as resource person. He explained fundamentals of stereochemistry, including definition of stereochemistry, Asymmetric Carbon atom, R and S Nomenclature with suitable examples. Configurational and conformational isomers, Enantiomers, Diastereomers with suitable examples. From this lecture students are able to do R and S notations confidently for any given compounds. Students are able to differentiate enantiomer and diastereomers etc. Near about 50 students of First Year B.Sc. benefited.

**Guest Lecture on Quantum Chemistry:**

Under DBT Star College Scheme, Guest Lecture on Quantum Chemistry organized for F Y B Sc and T Y B Sc class students. For this Guest lecture Prof. Dr. Shrikant Nikam, A T College Bhor, Pune was invited as a Resource Person. He gave elaborative talk on various aspects of Quantum Chemistry including, Difference between Classical and Quantum mechanics, concept of Black Body radiation and Photoelectric effect, Heisenberg's uncertainty principle, de-Broglie Hypothesis, Mathematical Wave Function ( $\Psi$ ), Physical Significance of  $\Psi$  and  $\Psi^2$ , conditions of Well-Behaved functions, Schrodinger's Wave Equation, Particle in 1D, 2D and 3D box. Near about 50 students of F Y B Sc and T Y B Sc benefited from this lecture.

**Science Exhibition for UG students:**

Under DBT Star College Scheme, The department of Chemistry had organized Science Exhibition for UG B Sc Students on 18/01/2023 at 11:00 am to 2:30 pm. The main objective of this activity is to create research attitude among the students and to enhance the skill of presentation of research topic. The Principal of Pune District Education Association's Waghire College Of Arts, Commerce and Science, Saswad Dr. Pandit Shelake inaugurated the exhibition and Prof. Dr. Suresh B. Waghmode and Prof. Dr. Latesh K. Nikam were present as a chief judge. The exhibition included projects which show use of solar energy, hydropower plant, global warming etc. Students had been prepared charts, models, power points and working models for presentation of their projects. The Exhibition was certainly successful because large number of students of under Graduate Science faculty were participated.



### **Industrial Visit at Surge Pharmaceuticals Jejuri:**

Under DBT Star College Scheme, the department of chemistry organized industrial visit at Surge Pharmaceuticals Jejuri For F Y B Sc students on 19/01/2023. Initially, we reach at Surge pharmaceuticals at morning 10:00 am. Mr. Praveen Kumar, Head, quality assurance, Surge Pharmaceuticals Pvt Ltd. Jejuri MIDC, Pune welcomes and gave information about Surge pharmaceuticals. After that, students visited at various departments, Instrumentation, Data analysis, Production department, Quality control department etc. From this visit students learn how the drugs are prepared, how to use different instruments for spectral analysis, use of FT-IR, UV-Visible spectroscopy, MASS spectrometer etc.



### **Industrial Visit at Science Park, Pimpri Pune:**

Under DBT Star College Scheme, the department of chemistry organized Industrial Visit at Science Park, Pimpri Pune for T.Y.B.Sc students on 08/02/2023. Initially, we reach at Science Park, Pimpri Pune 10:00 am. Students enjoyed this visit at Science Park's diverse facilities 3D movie, Galaxy

Show, the invention of wheel to the today's high end cars is exhibited. Students also learns From interactive displays illustrating fundamental scientific principles to advanced technological showcases, the park offered a comprehensive overview of various scientific domains. Science Park, a hub of knowledge and innovation, offers visitors a captivating journey through time, showcasing the evolution of human ingenuity. Among its diverse facilities, the 3D movie and Galaxy Show stand out, providing an immersive experience that traces the path from the invention of the wheel to the cutting-edge technology found in today's high-end cars. Near about 50 students and two faculty members were present for this visit.



**Workshop on use of ICT:**

The department of Chemistry also organized workshop on use of ICT for teacher's faculty members on 24.02.2024 at 11:00 am to 12:30 pm . For this activities Dr. R N More Associate Professor, A M College Pune, is invited as Resource Person. The workshop aimed to enhance educators' understanding of integrating Information and Communication Technology (ICT) tools into the teaching and assessment processes, aligning with the DBT-Star guidelines. The participants explored innovative approaches to leverage technology for effective learning outcomes. Dr. R N More, a seasoned expert in the field, shared valuable insights on incorporating ICT tools in chemistry education. He emphasized the importance of interactive and multimedia resources to make learning engaging and accessible. Practical demonstrations showcased various applications, software, and online platforms suitable for chemistry education. Participants actively participated in hands-on sessions, gaining practical experience in using ICT tools for designing lesson plans, interactive quizzes, and virtual experiments. The workshop fostered collaborative discussions on best practices and challenges in implementing ICT in the educational landscape. For this workshop the teachers from Chemistry, Microbiology, Botany and zoology department are actively participated.



### **Hands on Laboratory Best Practices:**

The Department of Chemistry also organized hands on Laboratory Safety best practices for non-teaching staff of the chemistry department on 12/07/2023. For this workshop, Mr. Rahul Jagtap, Industrialist, from Pune was invited as a Resource Person. He gave very Elaborative Lecture on Laboratory Best Practices. He also guided non-teaching staff how to deal with concentrated acids, and highly toxic chemicals, use of fire extinguishers during burning events happen in laboratory, how avoid explosion etc. For this lecture all teaching and non-teaching staff of the department was present.

### **Hands on training on Preparation of Standard Solutions:**

Under DBT Star College Scheme, the department of Chemistry also organized Hands on training of preparation of standard solutions for on 14/08/2023. For this hands on training on preparation of standard solutions we have invited Dr. D R Shinde, Associate Professor, Department of Chemistry, Ramkrishna More College, Akurdi, Pune. He gave very elaborative lecture on methods of preparation of standard solution. He explained the basic terms Mole, Molarity, Normality, Molality, Mole fraction in detail. How to do dilution, how to make dilution using Volumetric Flask for preparation of standard solution. Near about 74 students are present for this activity.

### **Green synthesis of nanoparticles:**

The interdisciplinary hands-on training workshop on nanoparticle synthesis was was organised by department of chemistry, Microbiology and Botany under DBT STAR scheme of the college during the academic year 2022-2023 on 26/07/2023 at 11:00 am to 2::30 pm on very important topic “Nanoparticle Synthesis” For this workshop we have invited a resource person Dr. Ashok Bankar Assistant Professor, Deapartment of Microbiology, MES Abasaheb Garware College, Pune, Maharashtra, India. The workshop on nanoparticle synthesis is conducted in two session, Session-I (11:00 am to 12:30 pm) includes the theoretical explanation of methods of nanoparticle synthesis, chractewrization techniques and different applications of nanoparticles in various fields. Session-II (1:00 pm to 2:30 pm) provides actual hands on training on Nickel, Copper, gold and silver nanoparticle synthesis. The students of chemistry, microbiology and botany departments actively involved and experienced how the colour changes during the formation of nanoparticle. The students prepared the Nickel nanoparticle using extract of *Jetropha Curcus plant extract and Gold nanoparticle* pomegranate leaves. The students have learn the synthesis of nanoparticles and enjoyed



both the sessions on nanoparticle synthesis. For this workshop near about 85 students are present.

## DEPARTMENT OF BOTANY

### List of Activities

Sr. No	Activities	Guest Name	No. of beneficiaries	Date
1	Aerobiological technique hands on training	Dr.Akshay Shete (14,000) Requirements (11,000)	30	7/01/2022
2	Skill development training programs and workshops on the horticultural techniques	Dr.B.M.Shinde (14,000) Requirements (11,000)	50	15/02/2022
3	Skill development training programs and workshops on the chromatography	Dr. Vishwadeep kapare (7000) Ms. Pallavi Bhagat (4000) Requirements (4000)	50	8/02/2022
4	Skill development training programs and workshops on the Ayurvedic formulations	Mrs.Anuja pandit (8000) Requirements (2000)	50	25/02/2022
5	One Day workshop on E-Herbaria	Dr.Mayur Nandikar (12000) Requirements (3000)	50	8/1/2022
6	Guest Lecture series-I	Dr. D. M Mahajan Dr. Varsha Shriram	65	17- 18/09/2021
7	Guest Lecture Series-II	Dr.R.B.Bhagat (7000) Mr.Prashant Borawake (4000) Dr.D.M.Mahajan (7000) Dr.Varsha shriram (7000)	79	21-22/9/2021
8	Field visits and survey	Travelling (30,000)	50	5/03/2022
9	Workshop on herbal cosmetics	Dr.Priyadarshani kadus (12000) Dr.Atul kapadia (12000) Requirements (6000)	25	4/10/2021

10	Bonsai workshop	Ms.Shailaja kapila ( 13000) Requirements (7000)	30	6/10/2021
11	Training programme on laboratory safety for non-teaching staff	Dr.Mahesh Borde (9000) Mr.Satyam Pawar (6000)	50	3/09/2021
12	Organization of Science exhibition, Competitions	Prof.Atishkumar Gavit (5000) Prizes: 1 <sup>st</sup> Pooja Kapare & Rutuja Kapare (4000) 2 <sup>nd</sup> Shweta Phadtare (3000) 3 <sup>rd</sup> Chaitanya Randive & Tufal Mulani (2000) Requirements (1000)	100	14/12/2021
13	Workshop on Instrumentation techniques: Microscopic, Microtomy	Dr.Kishor Rajput (12,000) Mr.Ajeet M (9,000) Requirements (4000)	50	28/12/2021
14	Workshop on Algae Culture	Dr.Vinayak Lokhande (14000) Mr.Iyyapan S (7000) Requirements (4000)	40	15/01/2021
15	Germplasm Conservation and protection of native/local varieties of crop	Mr.Prashant Borawake (9000) Mr.Yogesh Magar(6000)	50	9/5/2022

Sr. No	Activities	Guest Name	No. of beneficiaries	Date
1	Aerobiological technique hands on training	Dr.Sudam Jogdand (12,000) Mr.Akshay Shete (8000) Requirements (5000)	30	28-29/03/2023
2	Skill development training programs and workshops on the horticultural techniques	Mr.Anand Darveshi (14,000) Requirements (6000)	50	15-16/04/2022
3	Skill development training programs and workshops on the Plant tissue culture	Dr.Varsha Shriram (11,000) Requirements (4000)	50	19/04/2022
4	Skill development training programs and workshops on the Ayurvedic formulations	Mrs. Anuja Pandit (10,000) Requirements (5000)	50	22/04/2022
5	One Day workshop on Herbarium techniques	Dr. Mayur Nandikar (12,000) Requirements (3000)	50	1/05/2022
6	Guest Lecture series-I	Mrs.Kalpana Sawant (3000) Mr.Prashant Borawake (3000)	100	24-25/06/2022
7	Guest Lecture Series-II	Prof.C.P.Hase (11,000) Mr.Rajkumar Pawar (3000)	100	28-29/06/2022
8	Field visits and survey	Travelling	50	22/11/2022
9	Workshop on herbal cosmetics	Dr.Vijay Gadgil ( 12,000) Dr.Asmita Jadhav (12,000) Requirements (6000)	25	2/07/2022
10	Bonsai workshop	Dr.Erach Bharucha (14000) Requirements (6000)	30	6/07/2022

11	Training programme on Mushroom cultivation	Dr.Suresh Naidu (11,000) Requirements (4,000)	50	16/07/2022
12	Organization of Science exhibition, Competitions	Prof.Pradnya Jagtap (4000) Dr.R.U.Deshmukh (2500) Prize:1 <sup>st</sup> Kadbane Sakshi & Kalange Shreya (3000) 2 <sup>nd</sup> Jagtap Bhavana & Balgude Supriya (2000) 3 <sup>rd</sup> Jagdale Vaishnavi & M.P.Megha Manu (1500) Consolation Prize: Botre Neha & Kolte Tanuja (1000) Requirements (1000)	100	22/07/2022
13	Salad Decoration and Rangoli Competition	Prof.Atishkumar gavit (5000) Prof.Illias (5000)	50	16/12/2022
14	Germplasm Conservation and protection of native/local varieties of crop	Mr.Prashant Borawake (6000) Mr. Yogesh Magar(4000)	45	12/08/2022
15	Workshop on Instrumentation techniques: Chromatographic, Molecular Techniques	Prof.Nutan Malpathak (14,000) Mr.Vishwadeep kapare (10,000) Requirements (6000)	50	1-2/08/2022
16	Workshop on Algae Culture	Dr.Manisha Sangale (4000) Dr.Hrishikesh Khodade (3000) Requirements (3000)	40	6/08/2022
17	Poster presentation and visit to Saifabad College, Osmania University, Hyderabad	Travelling	6	04/09/2022
18	Medicinal Plants garden development		35 Non-teaching staff	2022-23

**DEPARTMENTS OF CHEMISTRY**  
**List of Activities Conducted Under DBT STAR**

Sr. No	Name of the activity	Name of Teacher Incharge	Date	Class	Resource Person
1	Hands on training on Spectrophotometry	Prof.Snehal Solankure	05/07/2021	T Y B Sc -50	Dr. Ganesh Nigade
2	Hands on training on Flame photometry	Prof.Snehal Solankure	13/07/2021	T Y B Sc- 50	Dr. Ganesh Nigade
3	Workshop on perfume synthesis	Prof.Ahiwale G.M.	10/08/2021	S Y B Sc - 50	Dr. Fazzal Sir
4	Workshop on sanitizer and hand wash making	Prof.Rathod S.B	22/02/2022	T Y B Sc - 50	Dr. Fazzal Sir
5	Guest lecture on spectroscopy	Prof.Shinde C.T.	16/03/2022	T Y B Sc - 50	Dr. Sangeeta Jagtap
6	Guest lecture on Coordination Chemistry	Prof.Shinde C.T.	17/03/2022	T Y B Sc - 50	Prof. Wandhare D M
7	Guest lecture on Crystal Structure	Prof.Ahiwale G.M.	18/03/2022	T Y B Sc - 50	Dr. Shrikant Nikam
8	Guest Lecture on Rearrangement Reactions	Prof.Shinde C.T.	19/03/2022	T Y B Sc - 50	Dr. Pawar Hari



9	Guest Lecture on Volumetric Analysis	Prof.Kamblé N.R.	22/03/2022	S Y B Sc - 52	Prof. Manoj Tapare
10	Guest Lecture on Stereochemistry	Prof.Shinde C.T.	23/03/2022	F Y B Sc - 52	Prof. S B Dhotre
11	Guest Lecture on Quantum Chemistry	Prof.Rathod S.B	24/03/2022	F Y B Sc - 55	Prof. S K Nikam
12	Science exhibition for UG students	Prof.Durgade K.M.	18/01/2023	F Y/ S Y/T Y B Sc - 100	Prof.Dr. Suresh Waghmode Prof. L.K. Nikam
13	Industrial Visit at Surge Pharmaceuticals	Prof.Durgade K.M.	19/01/2022	F Y B Sc - 60	Surge Pharmaceuticals, Jejuri MIDC
14	Industrial Visit at Science Park, Pimpri Chinchwad, Pune	Prof.Sonawane R.N.	08/02/2023	T Y B Sc-50	Science park Pimpri Chinchwad, Pune
15	Work shop on use of ICT in teaching learning and evaluation for faculty	Prof.Sonawane R.N.	24/02/2023	Teaching staff of Chemistry, Microbiology, Botany, Zoology	Dr. R N More
16	Hands on training workshop on Laboratory safety for nonteaching staff	Prof.Walunj S.B.	12/07/2023		Mr. Rahul Jagtap
17	Hands on training on preparation of standard solutions	Prof.Walunj S.B.	14/08/2023	F Y/ S Y/T Y B Sc	Dr. D R Shinde
18	Workshop green synthesis on nanoparticles	Prof.Rathod S.B	26/07/2023	F Y/ S Y/T Y B Sc	Dr. Ashok Bankar
19	Hands on training on Chromatography Techniques	K M Durgade	20/07/2021	S Y B Sc - 50	Dr. Borkar D J
20	Hands on training on water analysis	R N Sonawane	28/07/2021	T Y B Sc -54	Prof. Tapare Manoj
21	Guest lecture on Rotational and Vibrational Spectroscopy	R M Musale	27/08/2021	T Y B Sc -51	Prof. Sandip Labade
22	Guest Lecture on Chemical Thermodynamics	R M Musale	15/12/2022	F Y B Sc - 65	Prof. Sandip Labade
23	Hands on training on Polarimetric Techniques	R N Sonawane	10/01/2023	T Y B Sc-52	Prof. Vijay D Thopate
24	Guest Lecture on Chemical Kinetics	S B Rathod	12/01/2023	S Y B Sc -55	Dr. Latesh K. Nikam
25	Guest lecture on Stereochemistry	S B Walunj	14/01/2023	T Y B Sc	Prof. D D Gaikwad

## DEPARTMENTS OF MICROBIOLOGY

### List of Activities Conducted Under DBT STAR

Sr. No	Activity	Authority/Guest	No. of beneficiary	Date
1	Medical checkup, blood testing	Akshay Blood bank	30 parents	20/10/2021
2	Project competition	Swachh Technology challenge	1staff+10students	04/01/2022
3	Gynecological health check-up	Dr. Sunita Patil	31 ladies staff	31/03/2022

Sr. No	Activity	Authority/Guest	No. of beneficiary	Date
1	Hands on training, Chromatographic Techniques and Basic Techniques in Molecular Biology	Make Intern and E cell IIT Kharagpur	54 students	3 <sup>rd</sup> and 4 <sup>th</sup> Oct 2022
2	Gynechologica health check up for girl students	Dr. Sunita Kale	50 students	8 <sup>th</sup> Mar 2023
3	Hands on training, 'Isolation and enumeration of Bacteriophages'	Dr. Sangita Ahiwale	54 students	9 <sup>th</sup> Mar 2023

## **DEPARTMENTS OF ZOOLOGY**

### **List of Activities Conducted Under DBT STAR**

Sr. no.	Name of the activity	Resource person	Date	Time
1	Lecture on Basic Entomology	Ms.Nikita Saste	09/12/2021	9.30am to 1.30 pm
2	Kadjai Vanrai Survey of Chambli Village	Sunil Kokare and B.S. Madbhavikar	30/12/2021	9am onwards
3	International Day of Women and Girls in Science	Dr. Anupama Walwalkar Ms Vaibhavi Sutaone	11/02/2022	10.00 am to 2.30 Pm
4	Earth Day Celebration Lecture on Climate change and its Impact on Biodiversity	Dr. Mahendra Jagtap	22/04/2022	09.30am to 1.30 pm
5	Sericulture Workshop	Dr. Madhav Bhillave , Dr. R.D. Chaudhari, Dr. H.S. Karkar	21/08/2022	09.30am to 1.30 pm
6	Lecture Series on Health related Communicable Diseases	Dr. Vinod Sutaone	22/08/2022 To 25/08/2022	10.00am to 1.30 pm
7	Workshop on Owl Conservation	Dr. Satish Pande' Shri Rahul Lonkar, Shri Rajkumar Pawar	27/08/2022	9.30am to 3.30 pm
8	World Ozone Day	Dr. PradipAwate	16/09/2022	10.00am to 1.30 pm
9	World Habitat Day	Dr. Mahendra Jagtap	3/10/2022	10.00am to 1.30 pm

10	Wild Life Week	Dr. Sudhakar Kurhade, DR. Baban Ingole, Dr. Vidhin Kamble, Dr. Shrihari Pingale, Dr. Amit Pawashe, Dr. M.G. Babre, Dr. Bandela, Dr. Vinod Gaikwad, Dr. Laxmikant Shinde Dr. RajendraSalunkhe	10/10/2022 To 11/10/2022	9.30am to 1.00 pm And 2.0 pm to 4.00 pm
11	Guest Lecture On AIDS/ HIV	Dr. Balkrushna Kamble	01/12/2022	10.00am to 1.30 pm
12	Add On Course on Basic Identification of Phylum Arthropoda for Zoology Students.	Dr. Sudhakar Kurhade, Dr. Baban Ingole, Dr. Vidhin Kamble, Dr. Vinod Sutaone Dr. M.G. Babre, Dr. Bandela, Dr. VinodGaikwad, Dr. LaxmikantShinde	17/01/2022 to 22/01/2022	9.30am to 1.00 pm And 1.00Pm to 4.00 pm
13	Vector borne diseases-- Lecture series	Dr. Vinod Sutaone	2/1/2023 to 10/1/2023	10.00am to 1.00 pm
14	Lectures on Road deaths of wildlife and precautionary measures	Pandurang Madane	12/09/2022	10.00am to 12.00 pm
15	Basics of Apiculture	PrashantGawade, Alpesh Shah	22/09/2022	9.00am to 3.00 pm
16	Wildlife conservation lecture	Dr. Suruchi Pande Shri. Rajkumar Pawar, Dr. Murlidhar Mahajan	13/10/2022	11.00am to 2.00 pm
17	Visit to vermi compost unit of Gram GauravPratishthan	Yogesh Magar, Prashant Borawake	02/11/2022	9.00am to 3.00 pm
18	Demo Practical related to Extraction processes of bee products	Prashant Gawade and Sachin Kshirsagar	25/11/2022	10.00am to 3.00 pm
19	Vermicompost preparation	ShriPrashantBorawake	15/03/2023	9.00am to 3.00 pm
20	Demo Extra practical Remuneration	Ms. Nikita Saste	20/03/2023 to 27/03/2023	10:00 am to 3:00 pm
21	Lecture on Snakes and snake awareness	Shri Dattatray Murkute	25/04/2023	10.00am to 12.30 pm
22	Plants for Apiary and Butterfly Garden		22/07/2023	

**Co-Ordinator**  
**DBT- STAR College**



**PRINCIPAL**  
Waghire College, Saswad  
Tal. Purandar, Dist. Pune.