

Progress Report
by colleges supported under
DBT Star College Scheme
(2017-18)

Submitted by:
Shri Shivaji Mahavidyalaya Barshi,
Dist: Solapur (MS)



Department of Biotechnology

2017-18

**Proforma for submission of progress reports by
colleges supported under Star College Scheme**

S.No.	Name of the College	:	Shri Shivaji Mahavidyalaya Barshi
1	Name of Departments supported	:	Chemistry, Microbiology, Zoology, Physics, Botany, Electronics
2	Name of Coordinator, designation, address, phone nos.	:	Overall Co-ordinator/Member Secretary : Dr. V. M. Gurame, Assistant Professor, Department of Chemistry, Shri Shivaji Mahavidyalaya Barshi (9767131206) vmgurame@gmail.com
3	No. of regular faculty with Ph.D. in each participating department	:	Chemistry (5), Zoology(4) Microbiology(2) ,Botany(1), Electronics(2), Physics (2)
4	List of courses (B.Sc./M.Sc./PG Diploma, certificate etc) run by different participating departments	:	Chemistry (B. Sc., Ph.D), Microbiology (B. Sc., M.Sc., Ph.D.), Zoology (B. Sc.,Ph.D), Physics (B. Sc.,Ph.D.), Electronics(B. Sc., Ph.D.) Botany(B. Sc.), Certificate Course in soil and water analysis Diploma in food preservation, Diploma in Healthcare
5.	Cut off percentage for admission in different courses in Participating departments, positions in university, Percentage of result in 2017-18 academic session :		51.27% Number of students admitted to First Year B.Sc. (General), includes Chemistry, Zoology, Microbiology, Physics, Electronics, Botany, Mathematics, Statistics and computer science)

6. **List of projects undertaken by students, industrial visits by students, summer training in last one year :**

Projects undertaken

Sr No.	Name of Students	Title of Project
1	Ms. Jagtap R D	Production of Biodiesel from Castor Oil
2	Ms. Jadhav G G	Eco-friendly synthesis of N-containing heterocycles using nanoparticles
3	Mr. Patil Atish	Chemical Flag
4	Mr. Barche U B	Extraction of metals
5	Mr Deodware S A	Biological activity of some Schiff's bases
6	Ms Raut R S Ms. Bhosale S. A.	Magic pit



7	Jadhavar Priyanka Bhagwan	Bacteriophage as Bio-weapon for pathogen reduction in waste water
8	Badgude Priyanka Bapu	Studies on Trichoderma viridae used as Biofungicide
9	Tambat Rohini Balasaheb	Development of low cost technology for plant tissue culture
10	Chhoda Chetan Pradeepkumar	Microbial Colorant for Industrial Applications
11	Kharatmol Ashwini Masaji	Waste to Best : Agriculture waste for Protease production
12	Karade Ranjit Narayan	Volunteer management of Junior/ Youth Red Cross in college
13	Kade Amrita Abhiman	Subtype diversity and emergence of drug resistance in HIV-1
14	Gaware Durga Chandrakant	Antimicrobial activities of <i>Murraya koenigii</i> & <i>Emblica officinalis</i>
15	Netake Dhanashri Bhausahab	Studies on microbial degradation of endosulfan by soil bacteria
16	Chhoda Aishwarya Rajesh	Curd Bacteriocins - The Preservatives
17	Survase Madhuri Vijaykumar	Production of bacteriocin from probiotics, their properties and use of biopreservative
18	Kondhare Neha Subhash	Production, Extraction of biopigment & its application in textile industry-An ecofriendly approach
19	Inamdar Samarin Faruk	Verticillium lecanii- A Potential Bioinsecticide
20	Dhumal A H	Study of Biodiversity of frog in Barshi
21	Dalvi Apeksha. A.	Study of population dynamics of <i>A.anguisticula</i> (Stafford, 1904) found in <i>M.armatus</i> from Barshi.
22	Dhumal Akashta. H.	Study of population dynamics of <i>A.anguisticula</i> (Stafford,1904) found in <i>M.armatus</i> from Barshi
23	Gaikwad Pranita.B	Study of population dynamics of <i>A.anguisticula</i> (Stafford, 1904) found in <i>M.armatus</i> from Barshi.
24	Gilbile Nikita. B	Studies on diversity of snakes belonging to family colubridae from Barshi Town
25	Jadhav Nandini.S	Physico-Chemical parameters of Ganesh Lake from Barshi Dist Solapur.



26	Kale Akash .S	Studies on diversity of snakes belonging to family colubridae from Barshi Town.
27	Magar Priya.N	Taxonomical study of <i>A.anguisticula</i> (Stafford,1904) found in M.armatus from Barshi Region
28	Pathan Nurjaha.S	Taxonomical study of <i>A.anguisticula</i> (Stafford, 1904) found in M.armatus from Barshi Region.
29	Pawar Sujit.D.	Taxonomical study of <i>A.anguisticula</i> (Stafford, 1904) found in M.armatus from Barshi Region.
30	Pingale Dhanajay.H	Studies on diversity of ornamental fishes
31	Ratanaparkhe Kalyani.S	Physico-Chemical parameters of Ganesh Lake from Barshi Dist Solapur.
32	Salave Komal.I	Taxonomical study of <i>A.anguisticula</i> (Stafford, 1904) found in M.armatus from Barshi Region.
33	Sayyad Mohsina .J	Physico-Chemical parameters of Ganesh Lake from Barshi Dist Solapur.
34	Tupe Apeksha .D	Physico-Chemical parameters of Ganesh Lake from Barshi Dist Solapur
35	Varma Bhagyshree.S	Taxonomical study of <i>A.anguisticula</i> (Stafford, 1904) found in M.armatus from Barshi Region.
36	Wagmare Vijay.A	Studies on diversity of ornamental fishes.
37	Agalave Yogita Balaji	Tank overflow indicator
38	Ambure Saijan Nana	Conjoined alarm
39	Barbole Puja Gorakh	Synthesis of nanoparticles of copper oxide
40	Dahibhate Abhijeet Keshav	Home made air conditioner
41	Diophode Suchit Anil	Metal detector
42	Ghorapade Ashruba Siddheshwar	Sound sensor device
43	Joshi Laxmi Shrigopal	3 D hologram
44	Kamble Bharat Jagannath	Automatic switch on clap



45	Kanade Sudarshan Madhukar	Projector
46	Karale Reshma Bhaskar	Temperature sensor and digital display
47	Karande Mahesh Bhagwat	Mini JCB
48	Kashid Swapnali Anantrao	Solar plate
49	Kondhare Prajakta Ramling	Electricity saver device
50	Lawale Maruti Sudam	Synthesis of Al ₂ O ₃
51	Mali Krushna Janardhan	Application of heat sensor
52	Mujawar Rakhiya Jallauddin	Solar panel inverters
53	Mule Mohini Chandrakant	Burglar alarm
54	Patil Prajakta Mukund	Thin film deposition
55	Phartade Bhausahab Bharat	Rain alarm
56	Ransing Akshay Anna	Film projector
57	Sansare Dhanashri Babasaheb	Hydraulic press
58	Sawant Kishor Shivaji	Viscosity of different thick oils
59	Shinde Pallavi Madhukar	Energy from biomass like potato
60	Patil Mayur Pratap	Salt water vs tap water

Trainings, Workshops, conferences attended and scholarships received

- Ms. Jagtap J B & Ms. Bhosale P. U. of chemistry department qualified Malhotra Weikfield Foundation scholarship examination and participated in Malhotra Weikfield Foundation Workshop
- Nine students of chemistry department were awarded with DST Inspire scholarship and LIC golden Jubilee scholarship, scholarship.
- Seven Students of the electronics Department participated in Two days National workshop on “Soft Skills of PCB Designing” Organized by DBF Dayanand College Solapur on 29-30 December 2017.



- Eleven Students of the electronics Department participated in Two days National seminar on on New Nanomaterials , Devices, Technology and applications
- 29 students of Microbiology department participated in National conference on Microbial Technology for sustainable Development Organized by Department of Microbiology D.B.F. Dayanand college of Arts and Science Solapur
- 105 students of Microbiology department participated in 17th State Level Microbiolympaid Microbiological Contest(R C Patel College Shirpur) and Dr Chincholkar memorial Poster competition
- Thirty nine students have qualified in state level Micro-olympiod examination
- 200 students of physics department in Two days National seminar on on New Nanomaterials , Devices, Technology and applications
- 250 students of Botany department have participated in Botany festival and Skill development workshop
- Eight students of Botany department have participated in national seminar at D.B.F. Dayanand college of Arts and Science Solapur
- 13 students of zoology department participated in workshop at Walchand College Solapur.
- 150 students of Zoology Department have participated in Workshop on Recent Trends in Fisheries and Aquaculture at Barshi



Tours/visits Organized

Sr. No.	Locality	Number of Students participating
1	Kas Plateau , Satara	39
2	Shivaji University, Kolhapur, Malwan, Kunkeshwar	44
3	Goa sea shore, Goa University, NIO	45
4	Balaghat (Ramling)	85
5	Campus Flora	230
6	Ragiv Gandhi National Park, Katraj Pune	81
7	Apiculture Honey bee Centre,Pune	81
8	Malvan –Kunkeshwar and Kolhapur	42
9	XRD center Osmania University, Hyderabad	19
10	SEM center Osmania University, Hyderabad	19
11	RRS Fertilizers Pvt. Ltd. Barshi	65
12	Rambhai shaha Blood Bank Barshi	140
13	Science Exhibition, Barshi (Srujan -2018)	710

Significant scholarships/fellowship received to students of these departments

Sr No	Name of students(class)	Achievement/scholarship
1.	Ms. Jadhav G G(B Sc III)	DST Inspire SHE
2.	Ms Dhumal A H(B Sc III)	DST Inspire SHE
3.	Ms. Patil M P (B Sc III)	DST Inspire SHE
4.	Ms. Jadhav S G (B Sc II)	DST Inspire SHE
5.	Ms. Deshmukh A A (B Sc II)	DST Inspire SHE
6.	Ms. Gavhane P P (B Sc I)	DST Inspire SHE
7.	Ms. Shaikh T R (B Sc I)	DST Inspire SHE



8.	Ms. Jagtap J B (B Sc III)	Malhotra Weikfield Foundation fellowship
9.	Ms. Bhosale P. U. (B Sc II)	Malhotra Weikfield Foundation fellowship
10.	Ms. Gadhave S A(B Sc. II)	LIC Golden Jubilee Scholarship
11.	Ms. Shinde P. S. (B Sc. II)	LIC Golden Jubilee Scholarship
12.	Ms Rokade A A(B Sc. II)	LIC Golden Jubilee Scholarship
13.	Mr Jugdar R D(B Sc. II)	LIC Golden Jubilee Scholarship
14.	Barangule Jyoti Somnath	Central Sector Scholarship
15.	Gore Onkar Limbraj	Central Sector Scholarship
16.	Dudhe Amit Ajinath	Central Sector Scholarship
17.	Kaulage Laxman Dnyaneshwar	Central Sector Scholarship
18.	Shaikh Arbaj Badesaheb	Central Sector Scholarship
19.	Lomate Raturja Ratnakant	Central Sector Scholarship
20.	Patil Madhav Shantinath	Central Sector Scholarship
21.	Satpute Dnyaneshwar Bhairu	Central Sector Scholarship
22.	Sayali Hanmant Tonage	Central Sector Scholarship
23.	Manjare Pratiksha Meghavarn	Central Sector Scholarship
24.	Thengal Monika Santosh	Central Sector Scholarship
25.	Sukale Vidya Vishnu	Central Sector Scholarship
26.	Satpute Amaraja Shantilal	Central Sector Scholarship
27.	Vishakha Laxman Lokhande	Central Sector Scholarship
28.	Ukirade Apurva Rajesh	Central Sector Scholarship
29.	Parde Gauri Vishnu	Central Sector Scholarship
30.	Ghadage Pooja Gorakh	Central Sector Scholarship
31.	Ashwini Balasaheb Landage	Central Sector Scholarship
32.	Sunita Bhikaji Chavan	Central Sector Scholarship
33.	Komal Vaijinath Yadav	Central Sector Scholarship



34.	Shirin Riyaj Tamboli	Central Sector Scholarship
35.	Trupti Balu Vibhute	Central Sector Scholarship
36.	Shamshad Yusuf Chowdhary	Central Sector Scholarship
37.	Ghadge Diksha Satish	Central Sector Scholarship
38.	Rodage Sourabh Sunil	Central Sector Scholarship
39.	Waghmare Panchshila Manohar	Central Sector Scholarship
40.	Tambare Priyanka Maruti	Central Sector Scholarship
41.	Onkar Neminath Bhadange	Central Sector Scholarship
42.	Sonali Satish Parde	Central Sector Scholarship
43.	Oves Jainuddin Tamboli	Central Sector Scholarship
44.	Reshma Ramjan Shaikh	Central Sector Scholarship
45.	Ajinkya Bapu Kshirsagar	Central Sector Scholarship
46.	Kshirsagar Shweta Bapu	Central Sector Scholarship
47.	Shaikh Nilofar Kasim	Central Sector Scholarship
48.	Tasneem Mohseen Shaikh	Central Sector Scholarship

7. Training received by faculty from participating departments:

Sr.No.	Name of faculty	Training Name
1	Prin. Dr. P. R. Thorat	International symposium on "Microbes for sustainable Development : Scope and applications" Organised by Dr. Babasaheb University Lucknow
2	Dr T N Lokhande	National Symposium at Hyderabad
		Syllabus discussion workshop at Kurduwadi
		Workshop at DBF Dayanand College Solapur
3	Dr S H Gaikwad	National Symposium at Hyderabad
		Syllabus discussion workshop at Kurduwadi
		Workshop at DBF Dayanand College Solapur
4	Dr V M Gurame	ASC, HRDC Summer School at Raipur
		Syllabus discussion workshop at Kurduwadi
		Workshop at DBF Dayanand College Solapur
5	Shri D K Jamale	National Seminar at Osmanabad
6	Shri S H Patil	Syllabus discussion workshop at Kurduwadi
		Workshop at DBF Dayanand College Solapur
	Dr A B Shaikh	Workshop at DBF Dayanand College Solapur
5	Prof. S D Deokar	International Conference on Microbial Technology for Better Tomorrow , Dr.D.Y. Patil College, Pune
		International Conference on Antimicrobial Resistance, Organized by SASTRA Deemed University, Thanjavur, Tamil Nadu, India.
		National conference on Microbial Technology for sustainable Development (Organized by Department of Microbiology D.B.F.



		Dayanand college of Arts and Science Solapur)
6	Mr. Shelke R.R.	National Conference on Frontiers Bifertilizers & Biopesticides Organized by Rajmata Jijau College Pune, International Conference on Antimicrobial Resistance, Organized by SASTRA Deemed University, Thanjavur, Tamil Nadu, India. National conference on Microbial Technology for sustainable Development (Organized by Department of Microbiology D.B.F. Dayanand college of Arts and Science Solapur)
7	Ms S R Lokhande	International symposium on "Microbes for sustainable Development : Scope and applications" Organised by Dr. Babasaheb University Lucknow
8	Dr S S Salunkhe	International symposium on "Microbes for sustainable Development : Scope and applications" Organised by Dr. Babasaheb University Lucknow International conference at Gopal Krishna Gokhale College,Kolhapur Syllabus discussion workshop organized by Department of Zoology Walchand College Solapur Workshop on Recent Trends in Fisheries and Aquaculture at Barshi
9	Dr U V Gavhane	International symposium on "Microbes for sustainable Development : Scope and applications" Organised by Dr. Babasaheb University Lucknow Syllabus discussion workshop organized by Department of Zoology Walchand College Solapur Workshop on Recent Trends in Fisheries and Aquaculture at Barshi International conference at Pune
10	Dr R S Chati	International conference at Gopal Krishna Gokhale College,Kolhapur Syllabus discussion workshop organized by Department of Zoology Walchand College Solapur Workshop on Recent Trends in Fisheries and Aquaculture at Barshi
11	Dr A M Gaikwad	Syllabus discussion workshop organized by Department of Zoology Walchand College Solapur National conference at Y.C.College Tuljapur. Workshop on Recent Trends in Fisheries and Aquaculture at Barshi Orientation programme organized by Dr Babasaheb Ambedkar Marathwada University Auragnabad
12	Ms S M Kabbur	National Seminar on New Nano Materials Devices, Technology and applications held at Barshi Workshop at DBF Dayanand College Solapur
13	Dr R R Kothawale	National Seminar on New Nano Materials Devices, Technology and applications held at Barshi Workshop at DBF Dayanand College Solapur
14	Dr S D Waghmare	Refresher course on experimental physics organized by Indian academy of science Bangalore National Seminar on New Nano Materials Devices, Technology and applications held at Barshi
15	Dr U R Ghodake	National Seminar on New Nano Materials Devices, Technology and applications held at Barshi
16	Dr K P Deshmukh	National Seminar on New Nano Materials Devices, Technology and applications held at Barshi
17	Dr S P Gaikwad	Refresher course on environmental studies organized by Mumbai University Recent trends in plant sciences and agricultural research held at DBF Dayanand College Solapur
18	Ms S S Gaikwad	Recent trends in plant sciences and agricultural research held at DBF Dayanand College Solapur
19	Shri D S Bhise	Recent trends in plant sciences and agricultural research held at DBF



		Dayanand College Solapur
20	Ms Parmar Hetal	National conference on Microbial Technology for sustainable Development (Organized by Department of Microbiology D.B.F. Dayanand college of Arts and Science Solapur)
21	Ms Pradnya Patil	National conference on Microbial Technology for sustainable Development (Organized by Department of Microbiology D.B.F. Dayanand college of Arts and Science Solapur)
22	Ms Amruta Kokate	National conference on Microbial Technology for sustainable Development (Organized by Department of Microbiology D.B.F. Dayanand college of Arts and Science Solapur)

- All the teachers of these departments have attended in workshop on Intellectual Property Right organized by Shri Shivaji Mahavidyalaya Barshi in collaboration with IPFACE Pune.
- All the nonteaching staff of the college have attended the workshop on Laboratory Safety and disaster management. Organized by Shri Shivaji Mahavidyalaya Barshi in collaboration with Solapur University Solapur

8. List of exhibitions/seminars/training courses conducted by the college :

- Workshop on Intellectual Property Right organized by Shri Shivaji Mahavidyalaya Barshi in collaboration with IPFACE Pune.
- Workshop on Laboratory Safety and disaster management. Organized by Shri Shivaji Mahavidyalaya Barshi in collaboration with Solapur University
- Girls Students have participated in National Seminar Women Empowerment sponsored by Maharashtra State Commission for Women.
- Workshop on laboratory safety and disaster management was organized for the students and faculty.
- Students also participated in Regional research festival, University level and state level Avishkar research festival and five got prizes also.
- Workshop on intellectual property right in collaboration with Ipfac Pune
- Botany festival and Workshop on Flower decoration
- Workshop on Recent Trends in Fisheries and Aquaculture
- Poster presentation competition was organized by Zoology Department
- Poster presentation competition was organized by Physics and electronics Department
- Organization of Physica festival
- Organization of National seminar on New Nanomaterials , Devices, Technology and applications
- Organization of poster presentation competition by Zoology Department & Physics Department

9. Name, designation, host institute of guest faculty invited :

Sr No.	Name of resource person	Designation/Institute Name
1	DR. Anjana Singh	Professor in Microbiology, Tribhuvan University Nepal,
2	Dr. Tanzima Yeasmin	Professor in Biotechnology, University of Rajshahi ,Bangladesh
3	Dr Arun Adsul	Ex. Principal & HOD Physics, VP College Baramati
4	Dr V B Patil	Professor, Department of Physics, Solapur University Solapur
5	Mr. K. T. Tikhande	Manager, QC, Cipla Ltd. Goa



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6	Dr. K D Sonwane	Professor, Department of Bio-Chemistry, Shivaji University Kolhapur
7	Dr. Samadhan Nagane	NCL Pune
8	Dr. V. M. Gurame	Assistant Professor, Shri Shivaji Mahavidyalaya Barshi
9	Dr. P. V. Anbhule	Professor, Department of Chemistry Shivaji University Kolhapur
10	Mr. Jagdish Dalavi	JRF, Department of Botany, Shivaji University, Kolhapur
11	Ms. Priti Thonge	Department of Botany, Shivaji University, Kolhapur
12	Dr A K Deshmane	Professor, Bhagwant Institute of Technology, Barshi
13	Dr.M.K.Patil	Professor, SRTM, Nanded University Nanded
14	Shri S.N. Pawar	Department of Electronics and Telecommunication, Bhagwant Institute of Technology, Barshi
15	Dr S D Sartale	Department of Physics, Savitribai Phule Pune University Pune.
16	Dr Vishwas Sakhare	HOD, Zoology, Yogeshwari Mahavidyalaya Ambejogai
17	Dr Madhav Bhilave	Associate Professor, Department of Zoology, Shivaji University, Kolhapur
18	Dr Somnath Yadav	Associate Professor, College of Fishery Udgir Dist: Latur

10. **Date of Advisory committee meeting:** 25/07/2017, 28/04/2018

11. **List of New Practicals/demonstrations introduced in different departments in last one year :**
Chemistry

- Analysis of Commercial talcum powder
- Distribution law
- Glucose estimation by Polarimeter
- Study of Iron salicylate complex by colorimetry
- Dissociation constant of dibasic acid
- Study of chromatography
- Preparation of transition metal complex
- Determination of total hardness of water
- Analysis of Heavy metals ions in Environmental samples and health hazards(Zn)
- To study pH, Conductivity and total solids in soil samples.
- To study different parameters of water samples.
- To determine dissociation constant of weak acid conductometrically
- To verify the Onsager law.



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Department has successfully conducted all other practicals by increasing the accessibility and handling of instruments/glasswares.

Botany

- Qualitative and Quantitative estimation of carbohydrate, protein, nucleic acid and fats from plant samples.
- Isolation of DNA from plant material.
- Separation of Amino-acid by chromatography
- Estimation of Vitamin C from different plant samples.
- Separation of Alkaloids
- Tissue culture techniques (Demo)
- Somatic embryogenesis (Demo)
- Micro propagation (Demo)
- Separation of Isozymes using electrophoresis. (Demo)

Zoology

- Parasitology .(methodology of identification of parasites)
- To find out Ph of given sample.
- Estimation of Dissolved oxygen
- Isolation and separation of biomolecules
- To Check the weight of the given material
- Estimation of proteins and Carbohydrates
- Observation and identification given specimens/Slides/materials

Department has successfully conducted all other practicals by increasing the accessibility / handling of instruments/ glasswares. Department has successfully conducted all other Demonstrations about dissection using LCD projector.

Physics

- Use of C.R.O. for measurement of AC, DC voltage and frequency.
- Characteristics of FET.
- Constants of Ballistic Galvanometer
- Impedance of LCR series circuit
- Study of Characteristics of G M tube and determination of its operating voltage, Plate length and slope etc
- Logarithmic decrement to determine viscosity of a given liquid
- Motion of Spring and calculate (a) Spring Constant and (b) Value of G
- Diameter of a thin wire by studying the diffraction produced by it
- Equivalent conductivity of solution at its infinite dilution..
- SCR firing by UJT
- RS and JK flip flop
- FET as VVR
- Seven Segment Display
- Characteristics of SCR
- Estimation of efficiency of GM counter
- Determination of Beta particle range and maximum energy
- Hall effect
- Resistivity of semi conducting material by four probe method.
- Band gap/temperature sensor using semiconductor diode.
- Temperature sensor (PTCR & NTCR)
- Thin film preparation by any chemical method with different preparative parameters.

Electronics

- Kirchoff's Laws
- Thevenin's Theorem
- Superposition Theorem



- Characteristics of Semiconductor Diode
- Characteristics of BJT (CE and CB configurations)
- Characteristics of SCR
- Universal Gates
- Demorgan's Theorem
- Study of Flip Flops (RS, D, JK)
- Study of Counters ($\div 2$, $\div 5$, $\div 10$)
- Study of Multiplexers and Demultiplexers
- Study of Encoders and Decoders
- Study of Amplifiers (CE and CC configurations)
- Study of Oscillators (RC and LC oscillators)
- Study of Multivibrators (Astable, Monostable and Bistable)
- OP-AMP as Inverting and Non-Inverting Amplifier
- OP-AMP as Adder and Subtractor
- OP-AMP as Multivibrator (Astable and Monostable)
- Study of Digital to Analog(D/A) and A/D Converters
- SCR firing by UJT
- Light Dimmer using TRIAC
- Speed Control of DC Motor using SCR
- Study of Amplitude Modulation and Demodulation
- Data Communication using OFC cable (Optical Fiber Communication)
- Study of Instrumentation Amplifier
- Study of Load Cell
- Study of Light Activated Turn-On/ Turn-Off Circuits
- Study of On/Off Temperature Controller
- Study of Programmable Amplifier
- Study of LAN

Microbiology

- Electrophoretic separation of DNA
- Isolation of DNA from Bacteria
- Experiments on bacterial recombination process
- Production of Biofertilizers & Biopesticides.
- Isolation of Bacteriophage & Phage titration
- Estimation of alcohol
- Estimation of available Nitrogen from Soil
- Microbiological analysis of drinking water
- SPC of market Biofertilizers/milk /water /food
- Examination of Milk, i) DMC ii) Quantitative analysis of milk iii) Efficiency of pasteurization
- Study of Determination of effectiveness of antiseptic agent.
- Isolation pathogens of clinical samples.
- Urin analysis, i) Microscopic examination ii) Chemical examination
- One step growth experiment
- Effect of environmental factors on Micro organisms

Department has successfully conducted all other practicals by increasing the accessibility/handling of instruments/glasswares.



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**12. Details of equipment purchased in each department from DBT grant.
(item, no., cost, date of order placed, purchase/installation)**

Chemistry

Sr.No	Item	Number	Cost	Date of order	Remarks
1	Conductivity Meter EQ-665	6	62304	30/12/2017	Purchased and installed
2	P ^H - Meter EQ-615	4	41536	30/12/2017	Purchased and installed
3	Colorimeter EQ-651	4	43613	30/12/2017	Purchased and installed
4	Potentiometer EQ-606	3	22429	30/12/2017	Purchased and installed
5	Polarimeter EQ-801	3	102802	30/12/2017	Purchased and installed
6	Distillation Plant	1	28494	30/12/2017	Purchased and installed
7	Distillation plant Battery	1	9780	30/12/2017	Purchased and installed
8	Refractometer	2	27140	30/12/2017	Purchased and installed
9	Digital Balance with battery	3	84079	30/12/2017	Purchased and installed
10	Thermostat 24 hole	1	20376	30/12/2017	Purchased and installed
11	Vacuum Pump	2	12532	30/12/2017	Purchased and installed
12	Calomel Electrode	4	2492	30/12/2017	Purchased and installed
13	Platinum Electrode	6	8723	30/12/2017	Purchased and installed
14	Copper Electrode	8	2908	30/12/2017	Purchased and installed
15	Zinc Electrode	8	2908	30/12/2017	Purchased and installed
16	Combined Electrode	2	2492	30/12/2017	Purchased and installed
17	Conductivity Cell	3	6230	30/12/2017	Purchased and installed
18	Quartz for Distillation Unit	1	4540	30/12/2017	Purchased and installed
19	Desiccators	1	14862	30/12/2017	Purchased and installed
Total Amount			500240		



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Dept of Zoology

Sr. No.	Item	Number	Total Cost	Date of Order	Remarks
1	Camera lucida	01	897/-	11/01/2018	Purchased & installed
2	Digital ph meter(0-14ph)with unbreakable combined electrode table model	01	8708/-	11/01/2018	Purchased & installed
3	Dissolved oxygen meter 4-digit display with DO probe 0-100ppm,.1ppm accuracy	01	11682/-	11/01/2018	Purchased & installed
4	Electrophoresis Vertical Model Small For 3 Strips basic Unit With Platinum electrode assembly (2) Paper Supporting rods (2)& Power Cord	01	10,089/-	11/01/2018	Purchased & installed
5	High precision laboratory balancesmodel:CAH-223,capacity:220gm.sensitivity:o.01gm accuracy	01	29146/-	11/01/2018	Purchased & installed
6	Water bath thermostatic rectangular size:35*25*10cmrating watts 1000kw no of hole 06 hole completes ss	01	7080/-	11/01/2018	Purchased & installed
7	LM 521600 monocular microscope	20	1,99,986/-	11/01/2018	Purchased & installed
8	LM-52-1711 LYNX digital microscope	01	90,023/-	11/01/2018	Purchased & installed
Total			357611/-		



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Microbiology

Sr. No.	Item	Number	Total Cost	Date of order placed	Remarks
1	CAB5 Magazine Cabinet 20(Catlog no -CAB5)	01	16284	11/1/ 2018	Purchased & installed
2	Microscope(Model no LM -52 -1602)	10	144998	26/2/ 2018	Purchased & installed
3	Mini Submarine Electrophoresis Unit,	01	15441	11/01/2018	Purchased & installed
4	pH Meter with built in magnetic stirrer and Electronic Buffer	01	8411	11/01/2018	Purchased & installed
5	Digital Photoelectric Colorimeter	01	11894	11/01/2018	Purchased & installed
6	Spectrophotometer	01	37489	11/01/2018	Purchased & installed
7	Rotary shaker with clamps and accessories	01	87084	11/01/2018	Purchased & installed
8	Precision Balance	01	22302	11/01/2018	Purchased & installed
9	Anaerobic culture Jar	01	10514	11/01/2018	Purchased & installed
10	U V Inspection Cabinet	01	7009	11/01/2018	Purchased & installed
11	Portable water analysis kit	01	30680	11/01/2018	Purchased & installed
12	Single Channel Variable Vol Pipette	03	12104	11/01/2018	Purchased & installed
Total Cost			404210/-		



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Physics

Sr. No	Item	Number	Total Cost	Date of order Placed	Remarks
1	Digital Conductivity Meter Microprocessor Based with Cell k=1 and Accessories Conductivity Meter Direct reading 0.05M to 200m*/M EQ-660B Equiptronics	01	8815	09/01/2018	Purchased & installed
2	Tuning Fork	10	5190	09/01/2018	Purchased & installed
3	Sodium Lamp Transformer (55 w)	02	2338	09/01/2018	Purchased & installed
4	RS -JK Flip flop Kit	02	15168	09/01/2018	Purchased & installed
5	Ballistic Galvanometer 500 ohm.	02	14160	09/01/2018	Purchased & installed
6	CRO	01	25033	09/01/2018	Purchased & installed
7	SCR Fring Kit	01	32569	09/01/2018	Purchased & installed
8	Temperature Sensor (PTCR &NTCR)	01	16799	09/01/2018	Purchased & installed
9	Double refractive Prism	05	2822	09/01/2018	Purchased & installed
10	Digital electronic Balance (0.001 gm accuracy)	01	42000	09/01/2018	Purchased & installed
11	Hall Effect Set-up	01	24402	09/01/2018	Purchased & installed
12	Magnetic Stirrer	02	11800	09/01/2018	Purchased & installed
13	Four-Probe Set-up	01	50000	09/01/2018	Purchased & installed
Total			251096		



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Electronics

S. No.	Item	Number	Total Cost in Rs.	Date of order placed	Remarks
1	7 th generation Dell Desktop Optilex 3050	1	43700	03/03/2018	Purchased & installed
2	HP- 1136 Print Scan Copy	1	13950	03/03/2018	Purchased & installed
3	Study of Frequency shift keyed	1	3776	22/12/2017	Purchased & installed
4	Study of PAM/PPM/PWM	1	6608	22/12/2017	Purchased & installed
5	Study of Fiber optic communication	1	10384	22/12/2017	Purchased & installed
6	Frequency to voltage converter(LM 331)	1	2360	22/12/2017	Purchased & installed
7	Voltage to frequency to converter(LM331)	1	2360	22/12/2017	Purchased & installed
8	DTMF Decoder	1	5664	22/12/2017	Purchased & installed
9	Study of NE 565 PLL	1	2360	22/12/2017	Purchased & installed
10	Frequency multiplier using PLL 565	1	2360	22/12/2017	Purchased & installed
11	Op-AMP as Inverting amplifier & Non inverting amplifier	1	2360	22/12/2017	Purchased & installed
12	Op-AMP as Adder & subtractor	1	2360	22/12/2017	Purchased & installed
13	Op-AMP as Schmitt' trigger	1	2360	22/12/2017	Purchased & installed
14	Op-AMP as DAC using R-2R Ladder	1	2360	22/12/2017	Purchased & installed
15	Op-AMP as temperature controller	1	2360	22/12/2017	Purchased & installed
16	Op-AMP parameters(part I&II)	1	2360	22/12/2017	Purchased & installed
17	Op-AMP as Integrator & Differentiator	1	2360	22/12/2017	Purchased & installed
18	Op-AMP as Wien's bridge oscillator	1	2360	22/12/2017	Purchased & installed
19	Op-AMP (LM324) as instrumentation amplifier	1	2360	22/12/2017	Purchased & installed
20	Op-AMP as log Amplifier	1	2360	22/12/2017	Purchased & installed
21	DC motor control using SCR	1	2832	22/12/2017	Purchased & installed
22	PCB prototype Making Machine – 1a. ETS – PCBMATE PCB Prototype making Machine (300 W) with Controller	1	100000	03/03/2018	Purchased & installed
Total			219954		



Botany

Sr no	Item	Number	Cost	Date of order	Purchase /installation
1	LM 52504 Monocular Microscope	10 nos	99993/-	11/01/2018	Purchased & installed
2	Trinocular Research Microscope	1 nos	51920/-	11/01/2018	Purchased & installed
3	LM 50912/1 camera	1 nos	94400/-	11/01/2018	Purchased & installed
4	LM 52 retina screen	1 nos	18680/-	11/01/2018	Purchased & installed
5	Digital Spectrophotometer Vis(350-1100nm)With Digital Wavelength Read	1 nos	47790/-	11/01/2018	Purchased & installed
6	High Precision Lab Balance	1 nos	24575/-	11/01/2018	Purchased & installed
7	Hot Plate Rectangular	1 nos	5065/-	11/01/2018	Purchased & installed
8	Calorimeter	1 nos	10903/-	11/01/2018	Purchased & installed
Total			353326/-		

1. Details of books & journals subscribed from DBT grant.: Nil

2. Qualitative improvements due to DBT support Please highlight (5 salient lines) :

- The scheme helped to improve the quality of teaching, to boost interest of students in the subject and motivate them for further studies and research.
- Laboratory is strengthened due to DBT star college scheme
- More hands-on exposure and educational tours to students for better understanding of concepts
- Students get opportunity to listen and interact with scientists, academician and researchers
- Involvement of students in the research projects and inter-disciplinary activities in the science departments.

Due to this scheme the flow of students towards basic and life science subjects is increased and the high-ranked students are also joining the basic and life science

15. Problems faced, if any, in implantation of the programme and utilization of DBT grant (in two-three lines) :

Initially in adaption of PFMS, we have faced some problems, but PFMS team Mumbai has guided us to solve these problems. Please release the funds for 2018-19.


Co-Ordinator
DBT-Star College
Shri Shivaji Mahavidyalaya, Barshi




PRINCIPAL
Shri Shivaji Mahavidyalaya,
Barshi, Dist. Solapur-413411.