

# **Progress Report**

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**DBT Star College Scheme**  
(2013-14)

Submitted by:



**Progressive Education Society's**  
**Modern College of Arts, Science and Commerce**  
**Pune University Circle, Ganeshkhind, Pune**  
[www.moderncollegegk.org](http://www.moderncollegegk.org)

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**1) Name of the College:** **Progressive Education Society's  
Modern College of Arts, Science and Commerce,  
Ganeshkhind, Pune – 411 016**  
(Affiliated to Savitribai Phule Pune University, Pune; NAAC 'A'  
Grade, Recipient of Best College Award of S.P. Pune University,  
Supported under DST-FIST Programs)

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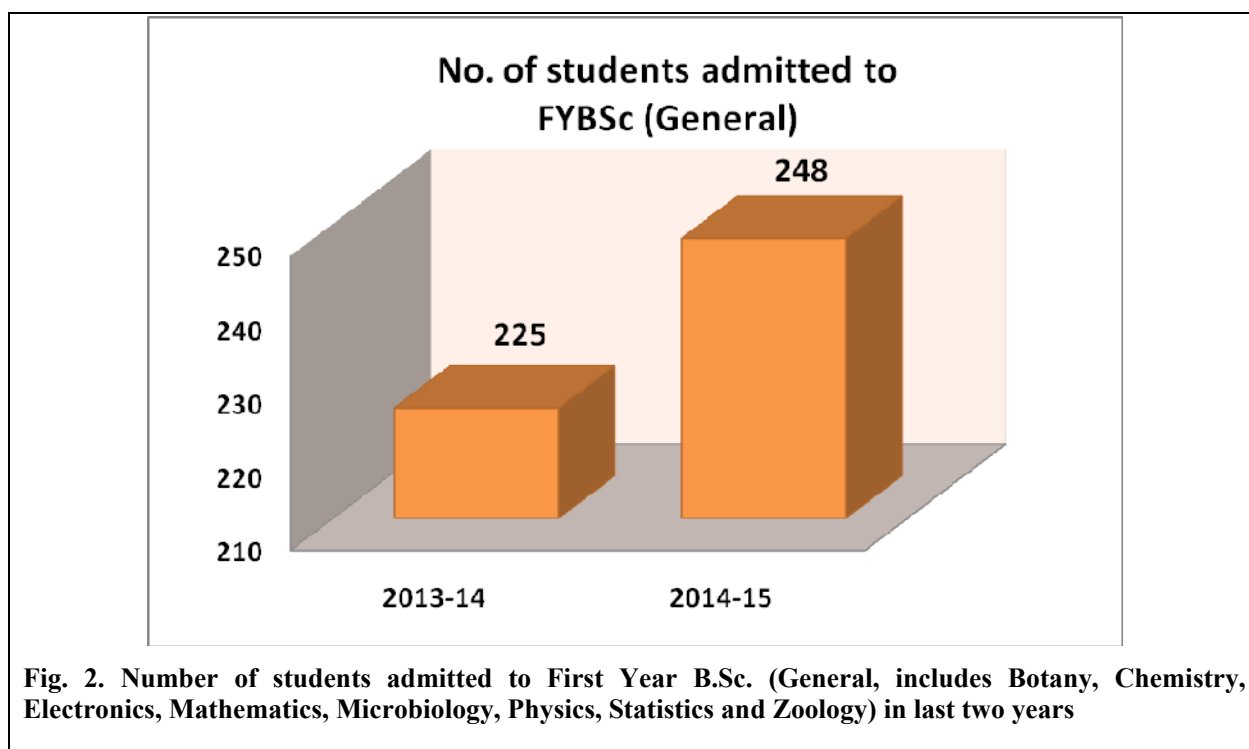
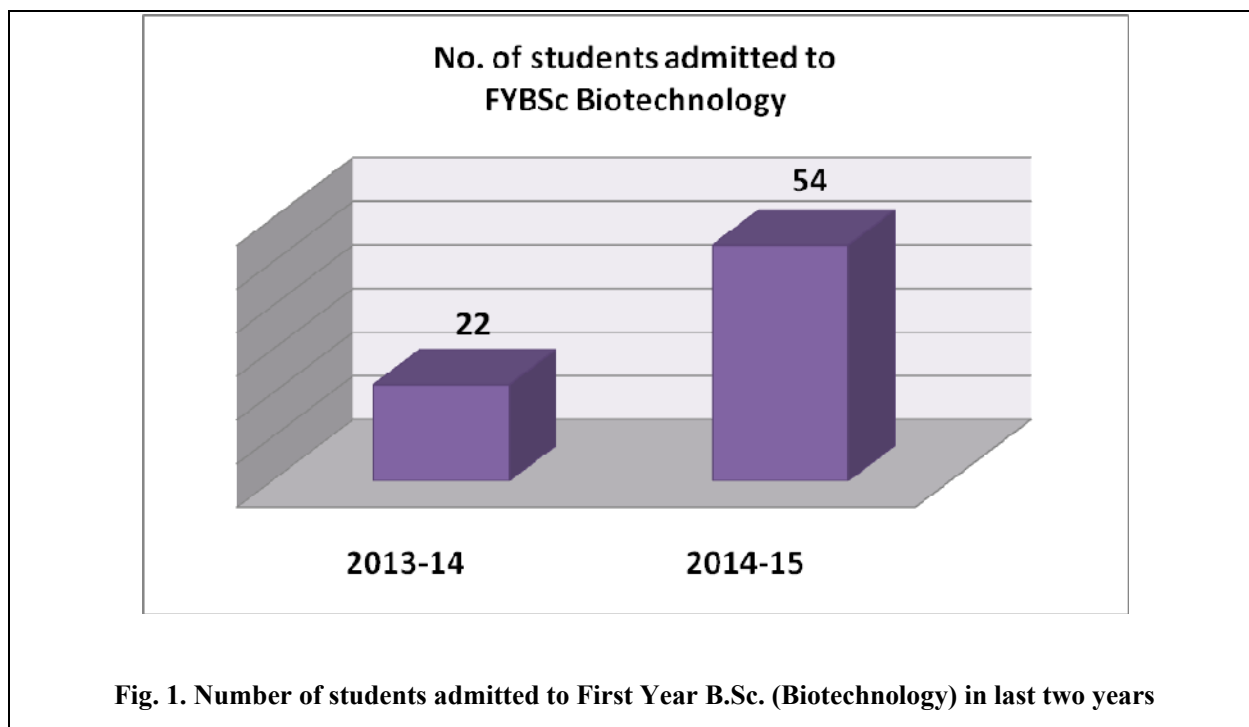
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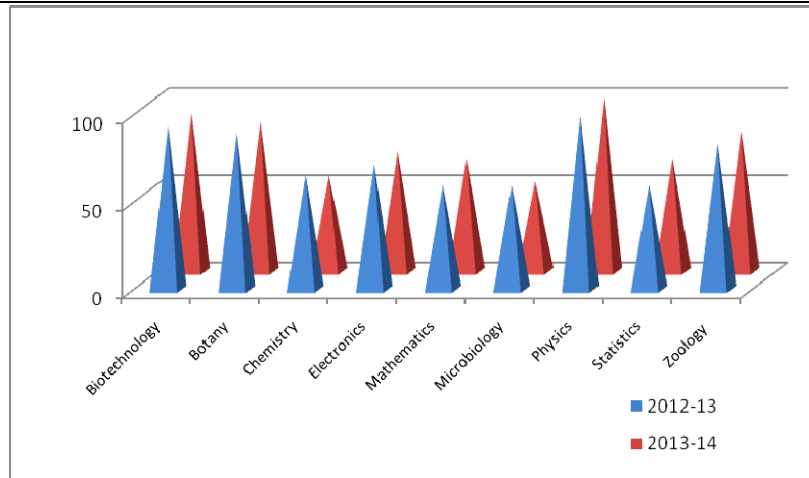
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3. Admission in different courses in the participating departments during current academic session:

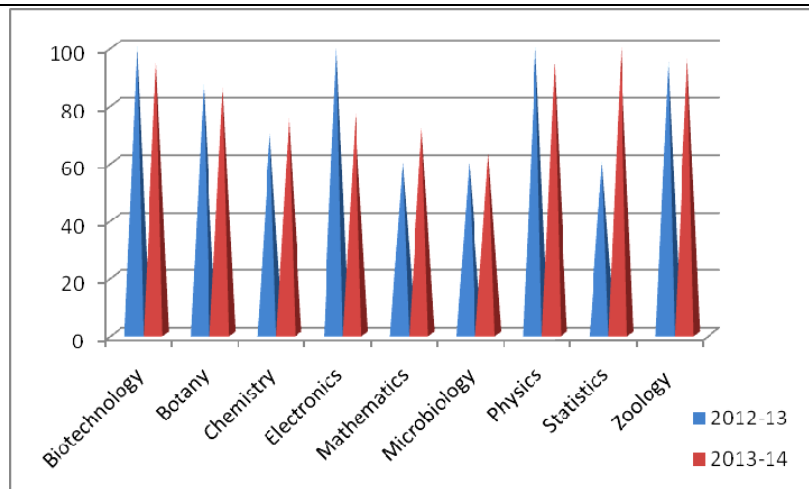
Cut off percentage for B.Sc. (Biotechnology) = 50%

Cut off percentage for B.Sc. (General) = 45%

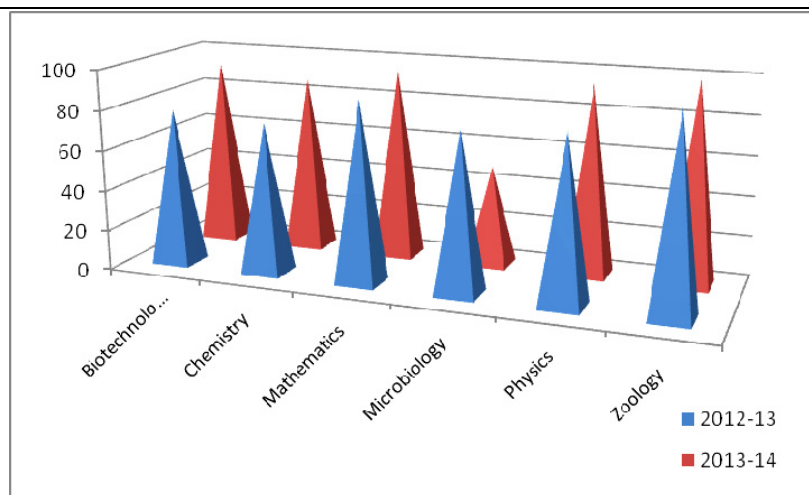




**Fig. 3. Percentage of results at First Year B.Sc. (FYBSc) in last two years**



**Fig. 4. Percentage of results at Second Year B.Sc. (SYBSc) in last two years**



**Fig. 5. Percentage of results at Third Year B.Sc. (TYBSc) in last two years**

## 5. Activities carried out during the year (department wise):

### A) Student activities

#### i. Summer Schools

##### **Mathematics Department**

S.Y.B.Sc. student Mr. Swapnil Shevkari attended one month training, organized by 'Mathematics Training and Talent Search' program at Chennai, funded by National Board of Higher Mathematics.

#### ii. Industrial Visits

A one-day industrial visit was arranged for F.Y. B.Sc. students (Physics, Chemistry, Botany, Zoology, Biotechnology, and Microbiology) to visit different industries and educational places at Baramati Industrial area (Dist. Pune) on 19<sup>th</sup> December 2014

##### **Industrial Visit mainly includes visit to:**

- a) Sugar Industry (Malegaon sugar industry)
- b) Distillery Plants (Malegaon sugar factory)
- c) Wine (Associated wines)
- d) Dairy (Nandan milks and milk products Pvt. Ltd.)

##### **Students also visited:**

- a) Agricultural farming (organic)
- b) Fruit plantation
- c) Nursery unit
- d) Sericulture unit,
- e) Organic Fertilizer unit,
- f) Different Types of Water Irrigation System,
- g) Fruit Processing Unit,
- h) Dairy Unit (Mechanize Milking Process),
- i) Vermiculture Project,
- j) Poultry Farming,
- k) Goat Farm,
- l) Sheep Farm,
- m) Organic fertilizer unit
- n) Poly House and Green House.

##### **Department wise-visits:**

##### **Biotechnology Department**

1. T.Y.B.Sc. – Visited Katraj Dairy, dt. 7<sup>th</sup> Oct. 2013
2. T.Y.B.Sc. – Visited Four Seasons Winery at Roti, Pune, dt. 31<sup>st</sup> Dec. 2013
3. T.Y.B.Sc. – Visited Distillery at Bhima Patas Sakhar Karkhana, Patas, Pune dt.31<sup>st</sup> Dec. 2013
4. S.Y.B.Sc. – Visited K.F. BioPlant Hadapsar, Pune, dt. 8<sup>th</sup> Jan 2014
5. T.Y.B.Sc. – Visited Katraj Dairy dt.4<sup>th</sup> Oct 2014.
6. T.Y.B.Sc. – Visited Waste Water treatment plant at Katraj Dairy dt. 4<sup>th</sup> Oct 2014.
7. F.Y.B.Sc. – Visited (a). Malegaon Sugar Factory and Distillery, dt. 19<sup>th</sup> Dec. 2014  
(b). Agriculture Trust Malegaon Baramati, dt. 19<sup>th</sup> Dec. 2014.

##### **Botany Department**

F.Y.B.Sc. – Visited Malegaon Sugar Factory and Distillery, and Agriculture Trust Malegaon, Baramati, dt. 19<sup>th</sup> Dec. 2014.

### **Chemistry Department**

1. F.Y.B.Sc. -Visit to Sugar industry, Winery and Dairy at Baramati, Pune on 19<sup>th</sup> Dec. 2014.
2. T.Y.B.Sc. - Visit to Kirti Soap industry, Hubli, Karnataka.

### **Electronics Department**

F.Y.B.Sc. and S.Y.BSc. - A visit to “Thuse Electronic Pvt. Ltd.” Bhosari MIDC, Pune, 8<sup>th</sup>Jan. 2014

### **Microbiology Department**

1. Students visited MCC-NCCS where they saw various instruments on 9/10/2013.
2. SYBSc & TYBSc- Agritourism, Baramati (Dist. Pune), 26/12/2013
3. TYBSc- Janakalyan Rakta Pedhi (Blood Bank), Pune, 31/01/2014
4. SYBSc & TYBSc- Kutwal Foods Pvt, Ltd. Shirur, 22/08/2014
5. TYBSc- National AIDS Research Institute, Pune, 02/12/2014
6. FYBSc- Agritourism, Baramati (Dist. Pune), 19/12/2014
7. T.Y.BSc- Parle Ltd. & Kamdhenu Masale

### **Physics Department**

F.Y.B.Sc. – Visited Sugar Industry, Winery and Dairy units. They also visited poly house, Green house, water irrigation system. Students were focused to observe the use of physics in all these, Baramati, dt. 19<sup>th</sup> Dec. 2014.

### **Zoology Department**

F.Y.B.Sc. – Visited Malegaon Sugar Factory and Distillery, and Agriculture Trust Malegaon Baramati, dt. 19<sup>th</sup> Dec. 2014.

**iii. List of Projects Undertaken by Students**  
**Biotechnology Department**  
**T.Y.B.Sc. (Biotechnology): 2013-2014**

<b>Name of student</b>	<b>Name of project</b>	<b>Name of Guide</b>
Gadge Anurag	Study of senescence in <i>Rosa centifolia</i> (hybrid type)	Mrs. Sneha Misal
Gupta Harshada	Stem cell therapy by cell separation	Dr. Sanjay Kharat
Kabraji Dariyus	Study of aquarium fish belonging to Poccilidae family.	Mr. PinakinWagh
Karwa Rutuja	Study of effects of chemical & biofertilizers on germination of seed.	Dr. Rekha Gupta
Kulkarni Priyanka	Effect of <i>Ipomea fistulosa</i> biopesticide on scara beetles.	Dr. Nivedita Das
Manjare Smruti	Diversity of <i>Holotiachia seriata</i> found in Raj. & Effect of Portbenium as biopesticide	Dr. Nivedita Das
Mishra Annu	Physio-chemical & Microbiological properties of Mula-mutha river sample found in Pune.	Mrs. Vaishali Randive
Palande Sangram	Response of chick embryo to nicotine induction.	Mr. Pinakin Wagh
Pansare Sanket	Integrated pest management	Dr. Prachi Rawal
Angre Mahima	Cytotoxicity on onion root tips using food colour.	Dr. Geeta Morwal
Belhekar Sonakshi	Production of biofuel from <i>E. crossipes</i> .	Mrs. Vaishali Randive
Dighe Vishwesh	In-vitro propagation of an orchid. ( <i>Vanilla planifolia</i> )	Dr. GeetaMorwal
Fatkar Naina	Microbiological properties of river water sample.	Mrs. Vaishali Randive
Gidwani Manish	Study of senescence in <i>Rosa damascus</i> (wild type)	Mrs. Sneha Misal
Paigude Snehal	Biofuel production from <i>Eichhornia crassipes</i> (Water hyacinth)	Mrs. Vaishali Randive
Malushte Riya	To study the effect of chemical and biofertilizers on germination of <i>Solanum melongena</i> and <i>Spinacea oleracea</i> .	Dr. Rekha Gupta
Gouraha Samiksha	Integrated pest management	Dr. Prachi Rawal
Pardeshi Mrunal	Bacterial Quorum Sensing	Mrs. Vaishali Randive
Indari Omkar	Biosurfactant production by indigenously isolated organisms	Mrs. Vaishali Randive
Kureel Diksha	In-vitro propagation of an orchid. ( <i>Vanilla planifolia</i> )	Dr. Geeta Morwal
Godbole Vikas	Oxidative stress during Vitamin A induced Tadpole tail regeneration	Dr. Nivedita Das
Shejwal Abhijeet	Morphological and biochemical analysis of tail and amputation in <i>Microhyla ornata</i> after Vitamin A treatment.	Dr. Nivedita Das
Mulik Gayatri	Physiological and biochemical analysis of Perchlorate toxicity on <i>Peltophorum spp.</i> with and without Mycorrhizal association.	Dr. Rekha Gupta
Mergu Ratnaprabha	Study of Microflora and Mycorrhizal growth in <i>Peltophorum spp.</i> In presence of Perchlorate Stress	Dr. Rekha Gupta
Godse Pushkar	Comparative analysis of effect of Biofertilizers on Protein content of <i>Triticum aestivum</i> and <i>Triticum durum</i>	Dr. Rekha Gupta
Kakade Pooja	Can indigenous microflora make efficient biofertilizers? (Nitrogen fixing bacteria)	Dr. Rekha Gupta
Khatavkar Prajakta	Can indigenous microflora make efficient biofertilizers? (Phosphate solubilizing bacteria)	Dr. Rekha Gupta



**Biotechnology Department: Research projects - T.Y.B.Sc. (Biotechnology) (2014-2015)**

<b>Student's Name</b>	<b>Title of Research Project</b>	<b>Guide's Name</b>
Dhanashree Bhatte	Effect of heavy metal (zinc sulfate) on sorghum cultivars.	Dr. Vinay Kumar
Akash Kharatkar	Assessment of antibacterial activity of Arjunakwath powder.	Dr. Rekha Gupta
Vipin Kumar	A study of keratinolytic bacteria and keratinase production from feather waste.	Dr. Nivedita Das
Gopika Mandal	Production and purification of Biodiesel from chicken feathers.	Dr. Nivedita Das
Sandhyarani Patro	Isolation, characterization and antifungal activity of <i>Pseudomonads</i> .	Dr. Vinay Kumar
Vrushali Pawar	Growth response and characterization of Pesticides degrading bacteria.	Dr. Vinay Kumar
Soniya Sheelwant	Production of probiotic chocolates and its application to chocolates.	Mrs. Snehal Gagare
Namrata Vahile	Identification, characterization, Isolation of pesticide tolerating bacteria from garden soil.	Dr. Vinay Kumar
Sumedh Waghmare	Effect of pesticide Fipronil on seed germination of <i>Trigonella foenum groecum</i> (Fenugreek).	Dr. Rekha Gupta
Bipin Kumar Agarwal	Study of genotoxicity and cytotoxicity of food preservative on plant root tips by RAPD analysis.	Dr. Geeta Morwal
Barkha Argulewar	Optimization of cellulose production.	Mrs. Vaishali Randive
Kranti Baravkar	Comparative study of Antibacterial effect of different weed plants from Pune.	Mrs. Vaishali Randive
Diksha Birari	Comparative study of acid and alkaline phosphatases in tadpole tail regeneration in <i>M. ornate</i> and <i>C. curtipes</i> .	
Elvina	Proximate analysis, synthesis of silver Nano particles and antibacterial activity of bamboo leaves.	Dr. Pooja Rana
Sherlyn Daniel	Screening and characterization of biosurfactant Producing bacteria obtained from soil contaminated with kerosene and evaluation of biosurfactant production using low cost substrate.	Dr. Pooja Rana
Jay Dave	Biofuel production using Wheat straw and banana Pseudostem	Mrs. Vaishali Randive
Rashmi Deore	Isolation and partial purification of anti microbial agent from soil Actinomycetes.	Dr. Vinay Kumar
Pranali Desai	Isolation, screening and optimization of barameters for biosurfactant producing microorganisms.	Dr. Pooja Rana
Sayali Deshmukh	Effect of microwave exposure on bioactive compounds present in spinach and dill leaves and their antimicrobial activity.	Mrs. Snehal Gagare
Dhanashree Salunke	Optimization of cellulose production (carbon sources and two different substrates)	Mrs. Vaishali Randive
Puja Gadekar	Comparative study of antibacterial effect of weed plant extract from pune district.	Mrs. Vaishali Randive
Aakash Gaikwad	Comparative study on phytochemical screening And antibacterial activity of leaves, stem and flavours of <i>Aistonia scholaris</i> .	Dr. Rekha Gupta

Sujata Hajare	Decolourization of methyl red and crystal violet dyes by micro organisms isolated from soil from textile industry.	Mrs. Snehal Gagare
Gouri Jadhav	In- vitro studies of <u>Vanilla planifolia</u> .	Dr. Geeta Morwal
Reshma Jadhav	Phytochemical and pharmacological evaluation of extracts of leaves of <u>Catharauthus roseus</u> .	Dr. Pooja Rana
Sonal Jadhav	In- vitro multiplication of <u>Vanilla planifolia</u> .	Dr. Geeta Morwal
Supriya Jadhav	Isolation and characterization of Congo-red dye By decolorization.	Mrs. Snehal Gagare
Shireen Jogdeo	Assessment of antibacterial activity of Triphala Churna.	Dr. Mrutyunjay S
Kajal Kamat	In- vitro response of <u>Centella asiatica</u> (L) urban for varying concentration of PGR.	Dr. Shalini Mathur
Bhagyashree M.	Effect of heavy metal on plants.	Dr. Vinay Kumar
Namrata Mandge	In- vitro studies of <u>Vanilla planifolia</u> .	Dr. Geeta Morwal
MaratkarSamrat	Isolation and characterization of probiotic bacteria from indigenous food material.	Dr. Rekha Gupta
Madhuri Mohite	In- vitro propagation of <u>A. paniculata</u> via callus Culture.	Dr. Shalini Mathur
Deeksha Nema	In- vitro cultivation of <u>C. asiatica</u> for biomass and Asiaticoside production.	Dr. Shalini Mathur
Jyotsna Patil	In- vitro propagation of <u>A. racemosus</u>	Dr. Shalini Mathur
Nazneen Peerzade	Oxidative stress during tadpole tail regeneration In <u>Microhylaornata</u> .	Dr. Nivedita Das
Laxmi R. Rajam	Effect of imidaelopridpaesticide on seed germination of <u>Vigna aconitifolia</u> .	Dr. Rekha Gupta
Rajat Dhar	Phytochemical, antibacterial and blood Coagulating property of leaves of <u>Tridax Procumbius</u> .	Dr. Rekha Gupta
Shroti Shelar	Optimization of cellulose production	Mrs. Vaishali Randive
Anuja Shinde	In- vitro studies of <u>Vanilla planifolia</u> .	Dr. Geeta Morwal
Aakash R Sukale	Production of biofuel from <u>E. crassipes</u> and Rice	Mrs. Vaishali Randive
Thakre Manikrao	Phytochemical and antibacterial screening of leaves of <u>Tridax procumbius</u> .	Dr. Rekha Gupta
Pooja Anil Tikone	In- vitro responce of medicinal plant <u>Tinospora cordifolia</u> .	Dr. Shalini Mathur

### Botany Department

The students of SYBSc carried out the projects based on the following themes:

1. Study on Azolla and their products
2. Bioactivities of some local medicinal plants
3. Study on diseases of *Euphorbia pulcherima* plants and their effects on plant physiology and biochemistry.

### Chemistry Department

Most of the S.Y.B.Sc. and T.Y.BSc. and many F.Y.B.Sc. students are engaged in research projects on the following themes:

1. Water analysis of drinking water from areas around College over the year- S.Y. B.Sc. students
2. Swimming pool water analysis for their pH and Chloride ions- F.Y. B.Sc. students.
3. Extraction of ethanol from various food products- T.Y. B.Sc. students.
4. Noise level in college due to Vehicles- T.Y. B.Sc. students
5. Isolation of Caffeine from a variety of tea powders available in the market.
6. Natural products isolation by Soxhlet extractor.
7. Synthesis of Azo dyes.
8. Synthesis of Polymer.
9. Synthesis of Aspirin from Salicylic acid.
10. Detection of fluoride from soft drinks.

### **Electronics Department**

All the students of SYBSc along with many FYBSc students are carrying out projects since last two years. Considering the industrial needs, students are focused on the following project themes:

1. Solar tracking System: To maximize solar energy throughput of solar cells.
2. Automatic Car parking System
3. DTMF car control
4. Classroom time table display further expanded as College schedule display.
5. Automatic Irrigation System
6. Line following ROBOT
7. Water level indicator

### **Mathematics Department**

All the TYBSc, and some SYBSc and many FYBSc students are working on the projects in the following main areas):

<b>Class</b>	<b>Name of the project</b>
F.Y.B.Sc.	Geometrical solids and conic sections
F.Y.B.Sc. (Computer Science)	Graphs using Autograph
F.Y.B.Sc.	Pascal Triangle
F.Y.B.Sc.	Birth-date Master
S.Y.B.Sc.	Cycloid curve
T.Y.B.Sc.	Calculus of Power series
T.Y.B.Sc.	Applications of Calculus
S.Y.B.Sc.	Predator Prey Model
F.Y.B.Sc. (Computer Science)	Fibonacci series

## Microbiology Department

### Projects

Project title	Name of the student	Class
Diversity of nail flora	Priyanka joshi, Priyanka shendage, Priyanka gore, Prajakta Dhagale	S.Y. BSc.
Should we really eat panipuri?	Komal Kaware, Rupali Lende, Ruchita Gulame, Prathamesh Parab	F.Y. BSc.
Isolation of plastic degraders	Juned Pathan, Asawari Ranade, Deepali kale, Mukesh Bhosale	S.Y. BSc
Isolation of pigment forming microorganisms in soil and air	Kajal Sutar, Pooja Ghodekar	F.Y. BSc
Life in pond water	Sachin Pawar, Ramesh Khande, Harshada Sawant, Mohini More	F.Y. BSc
Antibiotic resistance	Gayatri Wad, Apeksha Darshetkar	S.Y. BSc
Psychrotrophs	Pravin Kadam, Ramdas Pise, Yogita Gosavi, Jini Maliyakal	S.Y. BSc & T.Y. BSc.

### Models

Model title	Name of the student	Class
Zero discharge ethanol production	Mamlesh Waghmode, Sukomal Kate, Kashmira Badgujar, Lipi Joshi	T.Y. BSc.
Piezophiles	Rashmi Ahire, Maithilee Hanamghar, Hardik Shah	S.Y. BSc

#### Prize winners:

Second Prize: Zero discharge ethanol production - by Mamlesh Waghmode, Sukomal Kate, Kashmira Badgujar, Lipi Joshi (T.Y. BSc) during intercollegiate science competition.

#### Students participated in Rangoli Competition based on Microbiology theme:

T.Y. BSc: 14

F.Y. BSc- 1

#### Students participated in salad decoration Competition based on Microbiology theme:

T.Y. BSc: 7

**Physics Department:** Total No. of participating students: 44

Sr. No.	Name of the Students	Class	Project Title
1	Neha Borate	F.Y.BSc	Mainiture Guitar from matchbox
2	Shirin Barhanpure	F.Y.BSc	What happens to current carrying wire in Magnetic field
3	Ganesh Dhongade Prajyit Deshmukh Nikhil Kudale	F.Y.BSc	Electrical Motor
4	Dattatray Shinde Vijay Kanawade	F.Y.BSc	Solar System in 3D model
5	Snehal Sasane Momin Sabiya KanseSnehal	F.Y.BSc	Atmospheric Pressure
6	Mausami Narwal RupaliShelake Shailaja S.	F.Y.BSc	Projectile Motion
7	Prashant Pise Tushar Mukane	S.Y.BSc	Banking of road
8	Prakash Choudhari Pravin Pawar	S.Y.BSc	Satellite Communication
9	Prakash Kulat Nikhil Bhalerao DhirajYadav	S.Y.BSc	Hydraulic Lift
10	Chatrali Kulkarni ShivkanyaNakhte	S.Y.BSc	Metal Detector
11	Bhagashree Khetmalas KavitaKumbhar	S.Y.BSc	Rain Alarm
12	Gaurav Ghrote Vrushali Sobale SnehaParande	S.Y.BSc	Physics Survey
12	Reshma Garud PoojaGhalande	F.Y.BSc	Viscosity of Different hair oils
13	Yogesh Jamdade Swapnil Shevkari Dattatray Swant	S.Y.BSc	Effect of light intensity on stridulating of Black Cricket
14	Atul Sandesh	F.Y.BSc	Surface tension of different detergent
15	Ashibano Pathan	T.Y.BSc	Effect of radiation through mobile on Egg
16	Shweta Kulkarni Nachiket Kortikar	F.Y.BSc	Einstein curved spaced Theory
17	Mubina Nadaf	F.Y.BSc	Solar cell based on mobile charge
18	Pratiksha Chavan Ankita Mishra	F.Y.BSc	Black Holes
19	Swpnil Jagdale Sukadev Bhosale Mahesh Chopade	F.Y.BSc	Law of conservation of energy

### Statistics Department

Class	Name of the participant	Title of the Project
F.Y. B.Sc.	1) Pratiksha Chavan 2) Ankita Mishra 3) Shweta Vidhate	Health analysis of students based on BMI
	1) Shivani Bhor 2) Sanjivani Kadam 3) Ankita Yadav	Hundred years of Indian Cinema
S.Y. B.Sc.	1) Swapnil Shevkari 2) Vrushali Sobale 3) Shivkanya Nakate 4) Sneha Parande 5) Amit Yadav 6) Bhagyashree Khetmals 7) Yogesh Jamdade 8) Kavita Kumbhar	Estimation of traffic density at signals in University circle.

### Zoology Department

Sr. no.	Students involved	Name of the project
T.Y. B.Sc.	Pankaj A. Gorule, Pravin Pawar, Sapana Herole, Ankita Sarade and Glory Thavasimuthu	Hearing Impaired Alarm Device
S.Y. B.Sc.	Yogita Gosavi, Arya Panikar, Varsha Vasudevan	To study the oral morphology of the <i>N. khavalchor</i> and its relation to lepidophagy
S.Y. B.Sc.	Vedanti Zadap, Priyanka Shinde, Rutuja Nalge	Isolation of the gut microflora of <i>N. khavalchor</i>
S.Y. B.Sc.	Kirti Kambale, Navneet Parihar, Avinash Dhiware	Morphological and Molecular Screening of chitin utilizers from the gut of <i>N. khavalchor</i>
S.Y.B.Sc.	Nitin Sawant	Study of regeneration in Planeria <i>Dugesia tigrina</i>
S.Y.B.Sc.	Sachin Bishnoi, FarukShaikh, Saurabh Satav, NihalChavan	Study of cellular signaling and regeneration in Planeria
S.Y.B.Sc.	Sharwari Sadawarte, Sayali kalamkar, Neelam Borhade, Deepali Dhiware	Study of pray-predator interaction between <i>Clinotarsuscurtipus</i> and <i>Xenochrophispiscator</i> , common water snake
T.Y.B.Sc.	PradeepKumkar, SushantNavrange, Kishor Sonawane	Photochemistry of the traditional medicinal plant, <i>Gnidia glauca</i>

T.Y.B.Sc.	Pradeep Kumkar, Siddesh Rajpure	Isolation and Purification of piscicidal compound from plant <i>Gnidia glauca</i>
T.Y.B.Sc.	Nitin Sawant, Sandip Tapkir and Pradeep Kumkar	Isolation and characterization of TTX producing bacteria from the gut of bicolored frog tadpoles.
T.Y.B.Sc.	Nitin Sawant and Pradeep Kumkar	Study of fish fauna of Hiranyakesh river, Amboli, Kolhapur
T.Y.B.Sc.	Nitin Sawant and Pradeep Kumkar, Kishor Sonawane	Karyotype analysis of some freshwater fishes of Mula and Mutha river Pune, Maharashtra.
T.Y.B.Sc.	Pankaj Gorule, Avadhesh Tiwari, Glory Thavasimuthu	Hydrobiology of Tungarli and Valvan Dam, Lonavala with special reference to seasonal flux in certain physico-chemical parameters

The college had organised the event named as “Anubhuti” under which students participated and presented their different projects. The projects that were presented on behalf of the zoology department students were as below:

- i. **Project title: Hearing Impaired Alarm Device:**  
Project students: Pankaj Gorule, Pravin Pawar, Sapana Herole, Ankita Sarade and Glory Thavasimuthu, Class: T.Y.B.Sc.
- ii. **Project title: To study the oral morphology of the *N. khavalchor* and its relation to lepidophagy**  
Project students: Yogita Gosavi, Arya Panikar, Varshavasudevan, Class: S.Y.B.Sc.
- iii. **Project title: Isolation of the gut microflora of *N. khavalchor***  
Project students: Vedanti Zadap, Priyanka Shinde, Rutuja Nalge, Class: S.Y.B.Sc.
- iv. **Project title: Screening of chitin utilizers from the gut of *N. khavalchor***  
Project students: Kirti Kambale, Navneet Parihar, Avinash Dhiware, Class: S.Y.B.Sc.
- v. **Project title: Study of regeneration in *Planeria Dugesiatigrina***  
Project students: Nitin Sawant, Class: S.Y.B.Sc.
- vi. **Project title: Study of cellular signaling and regeneration in *Planeria*.**  
Project students: Sachin Bishnoi, Faruk Shaikh, Saurabh Satav, Nihal Chavan, Class: S.Y.B.Sc.
- vii. **Project title: Study of prey-predator interaction between *Clinotarsus curtipes* and common water snake, *Xenochrophis piscator***  
Project students: Sharwari Sadawarte, Sayali kalamkar, Neelam Borhade, Deepali Dhiware, Class: S.Y.B.Sc.
- viii. **Project title: Photochemistry of the traditional medicinal plant, *Gnidia glauca*.**  
Project students: Pradeep Kumkar, Siddesh Rajpure, Kishor Sonawane, Class: T.Y.B.Sc.
- ix. **Project title: Isolation and Purification of piscicidal compound from plant *Gnidia glauca***  
Project students: Pradeep Kumkar, Siddesh Rajpure, Class: T.Y.B.Sc.

- x. **Project title: Isolation and characterization of TTX producing bacteria from the gut of bicolored frog tadpoles.**

Project students: Nitin Sawant, Sandip Tapkir and Pradeep Kumkar, Class: T.Y.B.Sc.

- xi. **Project title: Study of fish fauna of Hiranyakeshiriver, Amboli, Kolhapur.**

Project students: Nitin Sawant and Pradeep Kumkar, Class: T.Y.B.Sc.

- xii. **Project title: Hydrobiology of Tungarly and Valvan Dam, Lonavala with special reference to seasonal flux in certain physic chemical parameters**

Project students: Pankaj Gorule, Avadhesh Tiwari, Glory Thavasimuthu, Class: T.Y.B.Sc.



### **xiii. Excursions**

#### **Biotechnology Department**

SYBSc students went for excursion tours to local areas such as Parvati Hill, Pune, Kaas Plateau and Sinhagad hill ranges during October 2013 and September 2014.

#### **Botany Department**

Local visits to College of Agriculture, Pune, during September 2013 and October 2014 to visit the agricultural experimental farms, besides poly-house and Biofertiliser units

#### **Physics Department**

- a) All the T.Y.BSc students visited to 'Ashram Shala' at Talegaon Dhamdhere, Pune. Students were able to see the use of wind and solar energy for meeting day to day need of energy at this residential school of nearly 300 students.
- b) T.Y. Physics & S.Y. students visited to 'Kamayani VidyaMandir' a school for mentally retarded children at Pune. This surely helped in developing social awareness amongst the students.
- c) A one day workshop was organized by the department on 'Telescope and Amateur Physics' for students of all faculties.
- d) Students participated enthusiastically in project and model competition of the Science Exhibition Anubhuti.
- e) F.Y.BSc- students visited Sugar Factory Pargaon, Pune. Students were excited to see working of Sugar Factory.

#### **Zoology Department**

- a) **F.Y.B.Sc.: Visited to Shrivardhan and Murud Janjira on 13 and 14 December 2013**, to study the rich marine biodiversity in Konkan region.
- b) **S.Y.B.Sc. and T.Y.B.Sc.:** Visited to Bondla sanctuary, NIO, Goa on 16th to 18th January 2014. The zoological excursion was carried out on 15th to 19th January 2014. Total 64 students were participated. The places of visit mainly includes:
  - i. CSIR-NIO (CSIR- National Institute of Oceanography)
  - ii. Goa Science Centre
  - iii. Sea shore and Bondla wildlife sanctuary

## B) Teachers' activities

### *i. Workshops, Seminars Conducted /Attended*

**On the instructions of DBT Star College Scheme Advisory Committee, the college conducted following workshops/training activities for its faculty members:**

1. A one-day workshop on handling of fluorescent microscope for faculty members of Biotechnology Department, September 2013
2. A one-day workshop on Spectrophotometry for faculty members of Biotechnology, Microbiology, Botany, Chemistry and Zoology, December 2013.
3. A one-day workshop on handling of various instruments including Electrophoresis, Gel Documentation for faculty members of Biotechnology, Microbiology, Botany, Chemistry and Zoology, April 2014
4. A one-day workshop on handling of various instruments including Electrophoresis, Gel Documentation for faculty members of Biotechnology, Microbiology, Botany, Chemistry and Zoology, April 2014
5. A one-day workshop on handling of Microtome for faculty members of Biotechnology, Microbiology, Botany, Chemistry and Zoology, November 2014

In addition to this, various activities were conducted by the supported departments as well as their faculty members attended workshops and training programs, the details are as follows:

### **Biotechnology Department**

#### **Conducted**

1. **Conducted a Two-Days workshop on “Microscope: Handling & Troubleshooting” for TYBSc (Biotechnology, Microbiology and Zoology) students, 22-23 December, 2014**

#### Speakers/Resource Persons:

Dr. B.B. Nath, Head, Department of Zoology, University of Pune, Pune

Dr. Athanu Basu, Scientist E, National Institute of Virology, Pune

Dr. MV Krishnasastri, Scientist F, National Center for Cell Sciences, Pune

2. **Conducted a Special Session on “Micro-techniques” for TYBSc (Biotechnology, Microbiology and Zoology) students, 23<sup>rd</sup> December, 2014**

#### Speakers/Resource Persons

Dr. Sanjay Kharat, Principal, Modern College, Ganeshkhind, Pune

3. **Conducted a Workshop on “Career opportunities abroad for Life Science Students” By Global India Pune, 5th Aug. 2013)**

#### **Attended by the teachers**

1. **Mr. Shardul Joshi** Participated in a workshop on Next Generation Sequencing and Data Analysis held at IISER, Pune. 24<sup>th</sup> to 27<sup>th</sup> February, 2014

### **Chemistry Department**

#### **Conducted**

1. Conducted a Two-day Workshop on Developing Technical Skills for placement, 15<sup>th</sup> and 16<sup>th</sup> Jan 2014

### **Attended by the teachers**

1. Refresher course in Chemistry, Department of Chemistry, University of Pune. (Dr. Mrs. Madhuri Kulkarni, Dr. Mrs. Sushma Katade Dec. 1-21, 2014 and Mrs. Anuradha Bhamidi, Nov.11-Dec 1, 2013 with A grade)

### **Electronics Department**

#### **Conducted**

1. Conducted a Two-day Hands-on-training program on “Printed Circuit Board Design (PCB)” for the FY and SYBSc students using software Eagle -7, total students participated – 23.
2. Department of Electronics conducted a certificate course on ‘Embedded Systems & Applications’.
3. **Quiz** based on basic knowledge of Electronics for F.Y.B.Sc students was conducted in an innovative manner, in the form of **Snake and Ladder** game.
4. **Project Exhibitions:** 17 groups exhibited projects/models on various ideas like security, automation, and environment.
5. **Seminars, Debate & Poster competition** was arranged on advanced topics in electronics on 16<sup>th</sup> January 2015 for F.Y.B.Sc. & S.Y.B.Sc. students from the college.
6. Conducted a 1-minute game competition based on basic technical skills in electronics for FY and SYBSc students, 15<sup>th</sup> January 2015.
7. Seminars and debates on advanced topics in electronics, for FY and SYBSc students, 16<sup>th</sup> January 2015.
8. Poster presentation on advanced topics of electronics, for FY and SYBSc students, 16<sup>th</sup> January 2015

#### **Attended**

1. Mrs.Varsha Bapat attended a workshop on **Implementation of S.Y.B.Sc (Comp.Sc) syllabus** and was a resource for Practical course held at St. Meera’s College, Pune.
2. Mrs.VarshaBapat&Mrs.PradnyaPathakji attended one day workshop on ‘**Wireless Sensor Networks**’ conducted by Dept. of Electronics, University of Pune in April 2014.
3. Mrs. Varsha Bapat attended a workshop on ‘**Photonics: An emerging technology**’ at Department of Electronic Science, Savitribai Phule Pune University, Pune.
4. Mrs. Pradhnya Pathakji attended a workshop on **Implementation of S.Y.B.Sc (Comp. Sc.) syllabus** and was a resource for Theory course held at St. Meera’s College, Pune

### **Mathematics Department**

#### **Conducted**

1. An activity named Mathematical Hockey was organized by the teachers for SYBSc and TYBSc students to learn mathematics in a different entertaining way.

#### **Attended**

1. Mrs. Swati Kandharkar and Mrs. Shamal Deshmukh attended a faculty development workshop conducted by IETR and Staff Academy, Modern College, Pune, 12-13 July 2014
2. Mrs. Shamal Deshmukh attended “Restructuring of S.Y.B.Sc. Mathematics Syllabi” workshop organized by Abasaheb Garware College, Pune on 24<sup>th</sup> December 2013.

3. Mrs. Shamal Deshmukh attended Teachers Enrichment workshop in multivariable calculus during 18<sup>th</sup> November 2013 conducted in Bhaskaracharya Pratisthan, Pune
4. Mrs. Shamal Deshmukh Attended “Problem coordination camp” for Madhava Mathematics competition held at Bhaskaracharya Pratisthan, Pune on 21<sup>st</sup> and 22<sup>nd</sup> September 2013.
5. Mrs. Shamal Deshmukh attended a Workshop in Scilab programming 30/9/2014 Organised by Modern college, Shivaginagar , Pune
6. Practical syllabus workshop 8/8/14 Organized by Abeda Inamdar College, Pune.
7. Mrs. Jayshree Jain attended “Restructuring of S.Y.B.Sc. Mathematics Syllabi” workshop organized by Abasaheb Garware College, Pune on 24<sup>th</sup> December 2013.
8. Mrs. Jayshree Jain and Ms. Pratibha Pawar attended Workshop in Scilab programming 30/9/2014 Organized by Modern college, Shivaginagar, Pune.
9. Mrs. Sangita Chaudhary attended a Workshop on Fractional Calculus April 2014, Organized by SERB’s School, Kerala.
10. Ms. Saraf Jyoti Balkrushna attended a Workshop IWOGAL-20143-6 Dec. 2014 Held at Kalasligm University, Tamil Nadu.

### **Microbiology Department**

#### **Conducted**

1. Placement Workshop for TYBSc students “Right Groundwork For Right Industry” conducted in collaboration with the Board of Student Welfare, University of Pune, 11<sup>th</sup> and 12<sup>th</sup> October 2013
2. Workshop on “Research Methodology & Scientific Communication” conducted in collaboration with AMI (Pune Unit), 3<sup>rd</sup> October 2013

#### **Attended**

1. Mrs. Sneha Ogale, Dr. Neelima Kulkarni, Mrs. Vaidehi Dande, Mrs. Ashwini Satbhai, Dr. Kavita Parekh, Ms. Debangi Chattopadhyay, and Ms. Priya Neurgaonkar attended AMI-ASM Workshop on Art of Science Communication
2. Dr. Kavita Parekh attended a DST-PURSE Workshop on Future Perspectives of Biological Sciences at Shivaji University, Kolhapur
3. Mrs. Vaidehi Dande attended an Experimental Biology Workshop for Post Graduate Teachers, conducted by Indian Institute of Science Education and Research, Pune.

### **Physics Department**

#### **Attended**

1. Mrs. Varsha Joshi attended a one day workshop on Syllabus reframing of S.Y.B.Sc. at Nowrosjee Wadia College, Pune.
2. Mr. M. D. Waghmare attended a workshop on “Nano Science & Nano Technology” at C.T. Bora College, Shirur-Pune.

### **Statistics Department**

#### **Conducted**

A one day workshop for FY/SY/TY BSc students was organized on the theme Use of R-Software for solving problem with the resource persons - Mr. V. R. Pawgi and Mrs. S.A. Ranade, Abasaheb Garware College, Pune, on 4<sup>th</sup> January 2014.

#### **Attended**

1. Mrs. S.S. Joshi attended a workshop on Applications of statistics in various domains of science, 25 & 26 Oct. 2013, organized by S. P. College, Pune.

## **Zoology Department**

### **Conducted**

1. A one-day demonstration session for animal tissue culture by Mr. Vinay Biradar Research scholar, Zoology department, University of Pune
2. A One day workshop on “Basic techniques in Life sciences” to be held on 20<sup>th</sup> February 2015 for the students of Modern as well as other colleges.
3. Poster Presentation on the scientific projects undertaken by the intra and inter-college students to be held in February 2015.

### **Attended**

Dr. R.V. Khirsagar attended the CLOUD COMPUTING State level workshop, organized by Yashwantrao Chavan college of Science Karad, 7<sup>th</sup> October 2013

## *ii. Training Courses Conducted /Attended*

### **Biotechnology Department**

1. Conducted a Training Course on carrier advancement in collaboration with Pacemakerz, Pune. (13-15<sup>th</sup> Feb 2014)

### **Chemistry Department**

#### **Attended**

1. Dr. Mrs. Madhuri Kulkarni Attended a training course “Unleashing potential for personal effectiveness”, on 12-13 July, 2014
2. International training programmes on leadership and career development for women scientists and technologists from 8-12 September 2014, organized jointly by IUSSTF, COACH, USA and DST at NIAS, Bengaluru. (Dr. Mrs. Madhuri Kulkarni, Dr. Mrs. Sushma Katade)

### **Electronics Department**

#### **Conducted**

1. Mr. Vivek Velankar guided (B.Sc. Comp.Sc. & B.Sc. Gen. A Div.) students on “Career Opportunities in IT industry ”
2. A Two-day “Hands-on-Training Program on Printed Circuit Board Design” conducted on 12-13 January 2015.

#### **Attended**

1. Two faculty members attended 2 days Training program in University of Pune, Department of Electronics on “**Nuvoton NU Micro ARM Cortex -M0 & its applications**”, January 2014.
2. Two faculty members completed certificate course in “**Embedded Systems Design**” organized at Department of Instrumentation & Control, College of Engineering, Pune, November 2014.

### **Mathematics Department**

#### **Attended**

1. Ms. Jayshree Gujrani and Ms. Pratibha Pawar attended an Orientation Course Conducted by Savitribai Phule Pune University, 3/11/2014-30/11/2014

### **Microbiology Department**

**Conducted** a Two-Day Hands-on-Training Session for TYBSc and MSc I students on the topic Gene Annotation: Theory and Practicals, by Dr. Dheeraj Dhotre, MCC-NCCS, Pune, on 26-27/08/2014

## **Zoology Department**

### **Conducted**

**1. Hands on training program on “Advances in Biochemical techniques” for F.Y.B.Sc. students: The program includes the following sessions:**

- a. Understanding the basic principle and working of the different instruments
- b. Understanding the basic operating procedures and its application

**2. Hands on training program “Recent trends in Biochemical techniques” for S.Y. B.Sc. students, 3<sup>rd</sup> to 8<sup>th</sup> February 2014. The program includes the following sessions:**

- a. Drosophila culturing, maintenance and isolation of the polytene chromosome
- b. Fish karyotyping
- c. Isolation of Bacterial DNA and gel electrophoresis
- d. Cell count by Haemocytometer - RBC and WBC count

### **Attended**

Mrs. Bharati V. Patil Attended two days training program for teacher counselors, organized by INDIAN RED CROSS SOCIETY, Maharashtra State Pune, 3<sup>rd</sup> and 4<sup>th</sup> December 2013

iii. *Guest Lectures (Please mention Name, Designation, Host Institute of the Guest Faculty)*

<b>S. No.</b>	<b>Title of the Lecture</b>	<b>Speaker (Guest Faculty)</b>	<b>Dates</b>	<b>Organized by</b>
2.	DRDO in pursuit of scientific excellence	Dr. Himanshu Shekhar, Scientist F, DRDO, Pune	13 <sup>th</sup> Sep 2013	Biotechnology Department
3.	Genome Sequencing	Dr. Yogesh Shouche, Scientist G, MCC-NCCS, Pune	14 <sup>th</sup> Oct 2013	Microbiology Department
4.	Classification and Identification of Fungi	Dr. Kiran Randive, Asst. Prof., Waghire College, Saswad, Dist. Pune	11 <sup>th</sup> Oct 2013	Microbiology Department
5.	Biosafety in life science laboratories	Dr. G. S. Grover Scientist G and Head Safety management Department , CSIR-National Chemical Laboratory, Pune	4 <sup>th</sup> Feb 2014	Biotechnology Department
6.	New Trends In Chromosome Research	Dr. B. B. Nath, Prof & Head, Dept of Zoology, University of Pune, Pune	7 <sup>th</sup> Feb 2014	Microbiology Department
7.	Transcriptomics and Microarray Technologies	Dr. Kavi Kishore Emeritus Professor, Department of Genetics, Osmania University, Hyderabad	12 <sup>th</sup> March 2014	Biotechnology Department
8.	Chemistry in Forensic Science	Mr. Rohidas Mundhe Senior Chemist, Forensic Science Laboratory, Pune		Chemistry Department
9.	Safety in Chemical Laboratory	Dr. G. S. Grover Scientist G and Head Safety management Department , CSIR-National Chemical Laboratory, Pune	8 <sup>th</sup> October 2014	Chemistry Department
10.	Mobile Technology	Mrs. M. Ghode		Electronics Department
11.	Embedded systems in day-to-day life	Dr. U. M. Chaskar	12 <sup>th</sup> December 2014	Electronics Department
12.	Generalized inverse of a Matrix	Dr. Y.M. Borse Assistant Professor, Department of Mathematics, Savitribai Phule Pune University, Pune	15 <sup>th</sup> September 2014	Mathematics Department



13.	Path to success through Statistics	Mr. C. E. Potnis CEO, Nitor Infotech Pune.	23 <sup>rd</sup> August 2013	Statistics Department
14.	Basics of Bioinformatics	Dr. Narendra V. Nyayanit Assistant professor, Bioinformatics Department, S. P. College, Pune	9 <sup>th</sup> February 2014	Zoology Department
15.	Geoinformatics and its uses in the field of life sciences	Dr. Ravindra Ranpise Assistant Professor, Environmental Science Department, University of Pune, Pune.	10 <sup>th</sup> February 2014	Zoology Department
16.	Basic Molecular Biology Techniques for Life Science Students	Dr. Arti Ozarkar: DST Woman Scientist, Department of Zoology, University of Pune, Pune	16 <sup>th</sup> February 2014	Zoology Department
17.	Introduction to Animal Tissue Culture	Mr. Vinay Biradar Research scholar, Zoology department, University of Pune	23 <sup>rd</sup> February 2014	Zoology Department
18.	DNA Sequencing	Dr. Yogesh Shouche, Scientist G, MCC-NCCS, Pune	25 <sup>th</sup> September 2014	Microbiology Department
19.	Developmental stages of Frog and Drosophila	Dr. Ravindra Kshirsagar, Assistant Prof., Zoology, MCASC, GK	10 <sup>th</sup> October 2014	Microbiology Department
20.	Gene Annotation: Theory and Practicals	Dr. Dheeraj Dhotre, MCC-NCCS, Pune	13/08/14 (Lect), 26/08/14, (Prac) 27/08/14 (Prac)	Microbiology Department
21.	Cancer Immunology	Dr. Sudha Gangal, Former Professor, Rajiv Gandhi Inst. of Biotechnology, Pune	27 <sup>th</sup> August 2014	Microbiology Department
22.	Cultivation of chick embryo	Prateek Katekar, Microbiologist, Venky's Ltd.	16 <sup>th</sup> September 2014	Microbiology Department

## 6. Advisory Committee Meeting:

### A) Constitution of Advisory Committee:

- |      |  |                          |                          |
|------|--|--------------------------|--------------------------|
| i.   | Dr. Sanjay Kharat  | Principal                | Chairman                 |
| ii.  | Dr. G. S. Chinchankar<br>Professor of Botany (Retd)<br>University of Pune,<br>Pune – 411 007                             | External Expert/Advisor  | Member                   |
| iii. | Dr. K. M. Kodam<br>Associate Professor,<br>Department of Chemistry<br>University of Pune,<br>Pune – 411 007              | External Expert/Advisor  | Member                   |
| iv.  | Dr. S. G. Deshpande<br>Senior Scientist,<br>CSIR-National Chemical Laboratory<br>Dr. Homi Bhabha Road,<br>Pune – 411 008 | External Expert/Advisor  | Member                   |
| v.   | Dr. Vinay Kumar  | Course Coordinator       | Member Secretary         |
| vi.  | <b>Departmental Coordinators:</b>  |                          |                          |
|      | 1. Mrs. S. Kandharkar  | Departmental Coordinator | Mathematics Department   |
|      | 2. Dr. Prachi Rawal  | Departmental Coordinator | Botany Department        |
|      | 3. Dr. S. A. Inamdar   | Departmental Coordinator | Zoology Department       |
|      | 4. Dr. Rekha Gupta   | Departmental Coordinator | Biotechnology Department |
|      | 5. Dr. Madhuri Kulkarni  | Departmental Coordinator | Chemistry Department     |
|      | 6. Mrs. Sneha Ogale  | Departmental Coordinator | Microbiology Department  |
|      | 7. Mrs. Varsha Joshi   | Departmental Coordinator | Physics Department       |
|      | 8. Mrs. Vaishali Salunkhe  | Departmental Coordinator | Electronics Department   |
|      | 9. Dr. Amita Dharmadhikari   | Departmental Coordinator | Statistics Department    |

### B) Advisory Committee Meetings Conducted after Implementation of the Scheme. If meeting held, please give the date/s and enclose the minutes.

Yes, the minutes are enclosed in Annexure I

7. **List of New Practicals/Demonstrations introduced for UG Students for each class (I<sup>st</sup>, II<sup>nd</sup> and III<sup>rd</sup> year) in Different Departments supported under Star College Scheme in last one year:**

**Department-wise list of new practicals introduced for UG students during 2013-14:**

**Biotechnology Department**

**a. Basic Biosciences (FYBSc students)**

- i. Demonstrations followed by teaching the use of basic instruments including microscope, spectrophotometer, centrifuge, pH meter, electronic balance, conductivity meter etc.

**b. Cellular & Molecular Biology and Genetic Engineering (SY and TYBSc students)**

- i. Isolation and characterization and study of sub-cellular components including chloroplast, mitochondria, nuclei etc.
- ii. Cell harvesting and cell lysis- methodology
- iii. Genomic / Plasmid DNA isolation from Eukaryotes/ Bacteria
- iv. Spectroscopic and Electrophoretic analyses of Nucleic acids and Proteins
- v. Restriction digestion of DNA and DNA ligation
- vi. Transformation of *E. coli* and Agrobacterium-mediated transformation of plant cells and selection of recombinants.
- vii. Polymerase Chain Reaction (PCR) technique and blotting experiments

**c. Basic Bioinformatics tools (TYBSc students)**

- i. Searching for gene/protein sequences and accessing information from web/databases
- ii. Information from genomes, BLAST, FASTA

**d. Plant Biotechnology (TYBSc students)**

- i. Histochemical analysis of the activity of cambium

**e. Animal Biotechnology (TYBSc students)**

- i. Maintenance of cell lines (Sp2O), viable cell count and growth studies
- ii. Study of staging & staining of Chick embryos
- iii. Study of frog development, observation of frog embryo development stages
- iv. Study of different types of sperms by smear Preparation.

**f. Microbial Biotechnology (SY and TYBSc students)**

- i. Fermentative Production of primary and secondary metabolite
- ii. Production of beverages (alcohol, wine)
- iii. Estimation of the fermentation products by colorimetric/titration/bioassay
- iv. Growth curve study-Bacteria and yeast
- v. Study of effect of growth conditions on microbial growth rate
- vi. Biomass production (Baker's yeast and Spirulina)

### **Botany Department (FY and SYBSc students)**

- i. Mushroom cultivation
- ii. Plant Tissue culture techniques
- iii. *In vitro* seed germination,
- iv. Callus induction and proliferation,
- v. Direct and indirect plant regeneration
- vi. Preparation and use of Digital herbarium
- vii. Production of Algal bio-fertiliser
- viii. Isolation of DNA from different plants
- ix. Observations of cell structures from plants under microscopes
- x. Gel electrophoresis of proteins
- xi. Gel electrophoresis of DNA

### **Chemistry Department**

- i. To determine the molecular refractivity of the given liquids A, B, C and D.(F.Y.B.Sc.)
- ii. To titrate  $\text{Cu}^{2+}$  ions with EDTA photometrically (S.Y.B.Sc.)
- iii. Determination of  $\lambda$  max and concentration of unknown solution of  $\text{CuSO}_4$  (T.Y.B.Sc.)
- iv. To prepare standard 0.2 M  $\text{Na}_2\text{HPO}_4$  and 0.1 M Citric acid solution, to determine the pKa value of these and unknown solutions (T.Y.B.Sc.)
- v. Separation of binary mixture of cations by Column Chromatography (T.Y.B.Sc.).

### **Electronics Department**

- i. To study the action of BJT as a switch- F.Y.B.Sc.
- ii. To study the thumbwheel and 7- segment display interface- F.Y.B.Sc.
- iii. To study the Crystal Oscillator circuit- S.Y.B.Sc.

### **Mathematics Department**

- i. Mathematics using Scilab Software – S.Y.B.Sc.
- ii. Functions and Polynomials using Scilab – S.Y.B.Sc.
- iii. Solving linear system using Scilab – S.Y.B.Sc.
- iv. Graphs using Autograph Software – F.Y.B.Sc.
- v. C-programming – T.Y.B.Sc.

### **Microbiology Department**

- i. Microscopic observation of fungi using Lactophenol Cotton Blue- FYBSc
- ii. Determination of Least Count, Capacity and Range of glass pipettes- FYBSc
- iii. Elevated temperature test for determination of fecal contamination of drinking water- SYBSc
- iv. Analysis of soil sample- TYBSc
- v. Swarming growth on nutrient media- FYBSc
- vi. Bacterial DNA isolation and detection- TYBSc
- vii. Egg inoculation technique- TYBSc
- viii. Serum protein separation by electrophoresis- TYBSc

### **Physics Department**

- i. Use of Bimolecular model for making different biomolecular structures by using ball and model stick-FYBSc
- ii. Demonstration and use of Polarimeter and practicals based on this to find specific rotations of different liquids- FYBSc
- iii. Demonstration and use of Ultrasonic Interferometer and practicals based on this to find velocity of ultrasonic waves in different liquids- SYBSc and TYBSc
- iv. To calculate the value of Planck's constant using different LED's- TYBSc
- v. To learn and verify the Lambert's Beer's Law by using photoelectric colorimeter-TYBSc

### **Statistics Department**

The faculty members in the Department have constituted New practicals (Using R-software) for F.Y.& S.Y.B.Sc. students

- i. Construction of different diagrams and graph- F.Y B.Sc.
- ii. Measures of central tendency- F.Y B.Sc.
- iii. Measures of dispersion- F.Y B.Sc.
- iv. Measures of skewness- F.Y B.Sc.
- v. Measures of kurtosis- F.Y B.Sc.
- vi. Computation of correlation coefficient- F.Y B.Sc.
- vii. Fitting of Binomial distribution- S.Y B.Sc.
- viii. Fitting of Poisson distribution- S.Y B.Sc.
- ix. Fitting of Normal distribution- S.Y B.Sc.
- x. Computations of probability by using above distributions- S.Y B.Sc.
- xi. Simple and multiple-regression- S.Y B.Sc.

### **Zoology Department**

- i. Study of principle and working of the following equipment's- Spectrophotometer, laminar air flow, microtome, cooling centrifuge, CO<sub>2</sub> incubator, Soxhlet apparatus, Rota evaporator, electrophoresis-F.Y.B.Sc..
- ii. Drosophila culturing, maintenance and isolation of the polytene chromosome- S.Y.B.Sc.
- iii. Study of fish Karyotyping- S.Y.B.Sc.
- iv. Isolation of Bacterial DNA and gel electrophoresis- S.Y.B.Sc.
- v. Total RBC count by Haemocytometer- S.Y.B.Sc.
- vi. Total WBC count by Haemocytometer- S.Y.B.Sc.
- vii. Differential WBC count- S.Y.B.Sc.
- viii. Isolation of nucleic acids from various tissues-T.Y.B.Sc.
- ix. Electrophoretic separation of DNA and proteins--T.Y.B.Sc.

**8. Number of Students taking Project vs. Total Number of Students. Please give list of projects (department-wise) during the support period.**

**Biotechnology Department:**

**All the students of TYBSc took projects in both the semesters. T.Y.B.Sc. (Biotechnology): 2013-2014**

Name of student	Name of project	Name of Guide
Gadge Anurag	Study of senescence in <i>Rosa centifolia</i> (hybrid type)	Mrs. Sneha Misal
Gupta Harshada	Stem cell therapy by cell separation	Dr. Sanjay Kharat
Kabraji Dariyus	Study of aquarium fish belonging to Poccilidae family.	Mr. PinakinWagh
Karwa Rutuja	Study of effects of chemical & biofertilizers on germination of seed.	Dr. Rekha Gupta
Kulkarni Priyanka	Effect of <i>Ipomea fistulosa</i> biopesticide on scara beetles.	Dr. Nivedita Das
Manjare Smruti	Diversity of <i>Holotiachia seriata</i> found in Raj. & Effect of Portbenium as biopesticide	Dr. Nivedita Das
Mishra Annu	Physio-chemical & Microbiological properties of Mula-mutha river sample found in Pune.	Mrs. Vaishali Randive
Palande Sangram	Response of chick embryo to nicotine induction.	Mr. Pinakin Wagh
Pansare Sanket	Integrated pest management	Dr. Prachi Rawal
Angre Mahima	Cytotoxicity on onion root tips using food colour.	Dr. Geeta Morwal
Belhekar Sonakshi	Production of biofuel from <i>E. crossipes</i> .	Mrs. Vaishali Randive
Dighe Vishwesh	In-vitro propagation of an orchid. ( <i>Vanilla planifolia</i> )	Dr. GeetaMorwal
Fatkar Naina	Microbiological properties of river water sample.	Mrs. Vaishali Randive
Gidwani Manish	Study of senescence in <i>Rosa damascus</i> (wild type)	Mrs. Sneha Misal
Paigude Snehal	Biofuel production from <i>Eichhornia crassipes</i> (Water hyacinth)	Mrs. Vaishali Randive
Malushte Riya	To study the effect of chemical and biofertilizers on germination of <i>Solanum melongena</i> and <i>Spinacea oleracea</i> .	Dr. Rekha Gupta
Gouraha Samiksha	Integrated pest management	Dr. Prachi Rawal
Pardeshi Mrunal	Bacterial Quorum Sensing	Mrs. Vaishali Randive
Indari Omkar	Biosurfactant production by indigenously isolated organisms	Mrs. Vaishali Randive
Kureel Diksha	In-vitro propagation of an orchid. ( <i>Vanilla planifolia</i> )	Dr. Geeta Morwal
Godbole Vikas	Oxidative stress during Vitamin A induced Tadpole tail regeneration	Dr. Nivedita Das
Shejwal Abhijeet	Morphological and biochemical analysis of tail and amputation in <i>Microhyla ornata</i> after Vitamin A treatment.	Dr. Nivedita Das
Mulik Gayatri	Physiological and biochemical analysis of Perchlorate toxicity on <i>Peltophorum spp.</i> with and without Mycorrhizal association.	Dr. Rekha Gupta
Mergu Ratnaprabha	Study of Microflora and Mycorrhizal growth in <i>Peltophorum spp.</i> In presence of Perchlorate Stress	Dr. Rekha Gupta
Godse Pushkar	Comparative analysis of effect of Biofertilizers on Protein content of <i>Triticum aestivum</i> and <i>Triticum durum</i>	Dr. Rekha Gupta
Kakade Pooja	Can indigenous microflora make efficient biofertilizers? (Nitrogen fixing bacteria)	Dr. Rekha Gupta
Khatavkar Prajakta	Can indigenous microflora make efficient biofertilizers? (Phosphate solubilizing bacteria)	Dr. Rekha Gupta

**Biotechnology Department: Research projects - T.Y.B.Sc. (Biotechnology) (2014-2015)**

<b>Student's Name</b>	<b>Title of Research Project</b>	<b>Guide's Name</b>
Dhanashree Bhatte	Effect of heavy metal (zinc sulfate) on sorghum cultivars.	Dr. Vinay Kumar
Akash Kharatkar	Assessment of antibacterial activity of Arjunakwath powder.	Dr. Rekha Gupta
Vipin Kumar	A study of keratinolytic bacteria and keratinase production from feather waste.	Dr. Nivedita Das
Gopika Mandal	Production and purification of Biodiesel from chicken feathers.	Dr. Nivedita Das
Sandhyarani Patro	Isolation, characterization and antifungal activity of <i>Pseudomonads</i> .	Dr. Vinay Kumar
Vrushali Pawar	Growth response and characterization of Pesticides degrading bacteria.	Dr. Vinay Kumar
Soniya Sheelwant	Production of probiotic chocolates and its application to chocolates.	Mrs. Snehal Gagare
Namrata Vahile	Identification, characterization, Isolation of pesticide tolerating bacteria from garden soil.	Dr. Vinay Kumar
Sumedh Waghmare	Effect of pesticide Fipronil on seed germination of <i>Trigonella foenum groecum</i> (Fenugreek).	Dr. Rekha Gupta
Bipin Kumar Agarwal	Study of genotoxicity and cytotoxicity of food preservative on plant root tips by RAPD analysis.	Dr. Geeta Morwal
Barkha Argulewar	Optimization of cellulose production.	Mrs. Vaishali Randive
Kranti Baravkar	Comparative study of Antibacterial effect of different weed plants from Pune.	Mrs. Vaishali Randive
Diksha Birari	Comparative study of acid and alkaline phosphatases in tadpole tail regeneration in <i>M. ornate</i> and <i>C. curtipes</i> .	
Elvina	Proximate analysis, synthesis of silver Nano particles and antibacterial activity of bamboo leaves.	Dr. Pooja Rana
Sherlyn Daniel	Screening and characterization of biosurfactant Producing bacteria obtained from soil contaminated with kerosene and evaluation of biosurfactant production using low cost substrate.	Dr. Pooja Rana
Jay Dave	Biofuel production using Wheat straw and banana Pseudostem	Mrs. Vaishali Randive
Rashmi Deore	Isolation and partial purification of anti microbial agent from soil Actinomycetes.	Dr. Vinay Kumar
Pranali Desai	Isolation, screening and optimization of parameters for biosurfactant producing microorganisms.	Dr. Pooja Rana
Sayali Deshmukh	Effect of microwave exposure on bioactive compounds present in spinach and dill leaves and their antimicrobial activity.	Mrs. Snehal Gagare
Dhanashree Salunke	Optimization of cellulose production (carbon sources and two different substrates)	Mrs. Vaishali Randive
Puja Gadekar	Comparative study of antibacterial effect of weed plant extract from pune district.	Mrs. Vaishali Randive
Aakash Gaikwad	Comparative study on phytochemical screening And antibacterial activity of leaves, stem and flavours of <i>Aistonia scholaris</i> .	Dr. Rekha Gupta

Sujata Hajare	Decolourization of methyl red and crystal violet dyes by micro organisms isolated from soil from textile industry.	Mrs. Snehal Gagare
Gouri Jadhav	In- vitro studies of <u>Vanilla planifolia</u> .	Dr. Geeta Morwal
Reshma Jadhav	Phytochemical and pharmacological evaluation of extracts of leaves of <u>Catharauthus roseus</u> .	Dr. Pooja Rana
Sonal Jadhav	In- vitro multiplication of <u>Vanilla planifolia</u> .	Dr. Geeta Morwal
Supriya Jadhav	Isolation and characterization of Congo-red dye By decolorization.	Mrs. Snehal Gagare
Shireen Jogdeo	Assessment of antibacterial activity of Triphala Churna.	Dr. Mrutyunjay S
Kajal Kamat	In- vitro response of <u>Centella asiatica</u> (L) urban for varying concentration of PGR.	Dr. Shalini Mathur
Bhagyashree M.	Effect of heavy metal on plants.	Dr. Vinay Kumar
Namrata Mandge	In- vitro studies of <u>Vanilla planifolia</u> .	Dr. Geeta Morwal
MaratkarSamrat	Isolation and characterization of probiotic bacteria from indigenous food material.	Dr. Rekha Gupta
Madhuri Mohite	In- vitro propagation of <u>A. paniculata</u> via callus Culture.	Dr. Shalini Mathur
Deeksha Nema	In- vitro cultivation of <u>C. asiatica</u> for biomass and Asiaticoside production.	Dr. Shalini Mathur
Jyotsna Patil	In- vitro propagation of <u>A. racemosus</u>	Dr. Shalini Mathur
Nazneen Peerzade	Oxidative stress during tadpole tail regeneration In <u>Microhylaornata</u> .	Dr. Nivedita Das
Laxmi R. Rajam	Effect of imidacloprid pesticide on seed germination of <u>Vigna aconitifolia</u> .	Dr. Rekha Gupta
Rajat Dhar	Phytochemical, antibacterial and blood Coagulating property of leaves of <u>Tridax Procumbius</u> .	Dr. Rekha Gupta
Shroti Shelar	Optimization of cellulose production	Mrs. Vaishali Randive
Anuja Shinde	In- vitro studies of <u>Vanilla planifolia</u> .	Dr. Geeta Morwal
Aakash R Sukale	Production of biofuel from <u>E. crassipes</u> and Rice	Mrs. Vaishali Randive
Thakre Manikrao	Phytochemical and antibacterial screening of leaves of <u>Tridax procumbius</u> .	Dr. Rekha Gupta
Pooja Anil Tikone	In- vitro responses of medicinal plant <u>Tinospora cordifolia</u> .	Dr. Shalini Mathur

**Many students of the department participated in various project competitions at various levels and won prizes as well, the details are as follows:**

**Participation in Avishkar Competition (a state level scientific competition) dated 10<sup>th</sup> December, 2013:**

- i) Ratnaprabha Mergu from TYBSc Biotech - presented poster on 'Studies on rhizoremediation of perchlorate in presence of mycorrhizal fungi'
- ii) Gayatri Mullick from TYBSc presented poster on 'Effect of perchlorate stress on biological and physiological processes in various plants'.

**1. Mrunal Pardesi T.Y.B.Sc.:-**



- 1<sup>st</sup> Prize Poster presentation (UG) at Biosynaps'14 Inter-College Competition organized by RJSPM College Bhosari, Pune Topic- Apoptosis dance of death.
- 1st Prize in Quiz at Biosynaps'14.
- 2nd Prize Paper presentation at Biosynaps'14 Inter College Competition organized by RJSPM College, Bhosari, Pune Topic- Apoptosis & Carcinogenesis.
- 3rd prize in Poster Presentation at Anubhuti, College level competition organized by Modern College, Ganeshkhind, Pune.

## **2. Omkar Indari T.Y.B.Sc:-**

- 1st Prize Poster presentation (UG) at Biosynaps'14 Inter College Competition organized by RJSPM College, Bhosari, Topic- Apoptosis: dance of death.
- 1st Prize in Quiz at Biosynaps'14.
- 2nd Prize Paper presentation at Biosynaps'14 Inter College Competition organized by RJSPM Bhosari. Topic- Apoptosis & Carcinogenesis.
- 3rd prize in Poster Presentation at Anubhuti, College level competition organized by Modern College, Ganeshkhind, Pune
- **Pooja Ekawale F.Y.B.Sc.-** Inter College Model presentation (RJSPM College, Pune) - 1<sup>st</sup> Prize
- **Akash Dilip Gaikwad & Sumedh Wagnare S.Y.B.Sc –** Participated in Inter-college Poster competition at RJSPM College, Bhosari, Pune

## **3. Manik Rao R. Thakare S.Y.B.Sc –**

- 1<sup>st</sup> Rank in CHEMIAD at University of Pune
- Participated in Inter-college Poster competition at RJSPM College, Bhosari
- **Kranti Baravakar S.Y.B.Sc -** Participated in Inter-college Poster competition at RJSPM College, Bhosari, Pune

## **Botany Department**

All the students of SYBSc carried out the projects based on the following themes:

1. Study on Azolla and their products
2. Bioactivities of some local medicinal plants
3. Study on diseases of *Euphorbia pulcherima* plants and their effects on plant physiology and biochemistry.

## **Chemistry Department**

Most of the T.Y.BSc and many of F.Y.B.Sc. and S.Y.B.Sc. students are engaged in research projects on the following themes:

4. Water analysis of drinking water from areas around College over the year- S.Y. B.Sc. students
5. Swimming pool water analysis for their pH and Chloride ions- F.Y. B.Sc. students.
6. Extraction of ethanol from various food products- T.Y. B.Sc. students.
7. Noise level in college due to Vehicles- T.Y. B.Sc. students
8. Isolation of Caffeine from a variety of tea powders available in the market.
9. Natural products isolation by Soxhlet extractor.
10. Synthesis of Azo dyes.

- 11.Synthesis of Polymer.
- 12.Synthesis of Aspirin from Salicylic acid.
- 13.Detection of fluoride from soft drinks.

### **Electronics Department**

All the students of SYBSc along with many FYBSc students are carrying out projects since last two years. Considering the industrial needs, students are focused on the following project themes:

1. Solar tracking System: To maximize solar energy throughput of solar cells.
2. Automatic Car parking System
3. DTMF car control
4. Classroom time table display further expanded as College schedule display.
5. Automatic Irrigation System
6. Line following ROBOT
7. Water level indicator

### **Mathematics Department**

Total 21 students have taken projects; the list of themes is as follows:

1. Geometrical solids and conic sections
2. Graphs using Autograph
3. Pascal Triangle
4. Birth-date Master
5. Cycloid curve
6. Calculus of Power series
7. Applications of Calculus
8. Predator Prey Model
9. Fibonacci series

### **Microbiology Department**

Total 35 students have taken projects.

The list of themes on which all students of TYBSc are working in group is as follows:

- a) Potability testing of drinking water samples collected from campus
- b) Biofertilizer production, application and checking its efficacy

Additionally students have taken up different projects in a group of 3-4 students; the details are as follows:

#### **Projects**

<b>Sr. No.</b>	<b>Project title</b>	<b>Name of the student</b>	<b>Class</b>
1	Diversity of nail flora	Priyanka joshi, priyanka shendage, Priyanka gore, Prajakta Dhagale	S.Y. BSc.

2	Should we really eat panipuri?	Komal Kaware, Rupali Lende, Ruchita Gulame, Prathamesh Parab	F.Y. BSc.
3	Isolation of plastic degraders	Juned Pathan, Asawari Ranade, Deepali kale, Mukesh Bhosale	S.Y. BSc
4	Isolation of pigment forming microorganisms in soil and air	Kajal Sutar, Pooja Ghodekar	F.Y. BSc
5	Life in pond water	Sachin Pawar, Ramesh Khande, Harshada Sawant, Mohini More	F.Y. BSc
6	Antibiotic resistance	Gayatri Wad, Apeksha Darshetkar	S.Y. BSc
7	Psychrotrophs	Pravin Kadam, Ramdas Pise, Yogita Gosavi, Jini Maliyakal	S.Y. BSc & T.Y. BSc.

#### Models

Sr. No.	Model title	Name of the student	Class
1	Zero discharge ethanol production	Mamlesh Waghmode, Sukomal Kate, Kashmira Badgujar, Lipi Joshi	T.Y. BSc.
2	Piezophiles	Rashmi Ahire, Maithilee Hanamghar, Hardik Shah	S.Y. BSc

#### Prize winners:

Second Prize: Zero discharge ethanol production - by Mamlesh Waghmode, Sukomal Kate, Kashmira Badgujar, Lipi Joshi (T.Y. BSc) during intercollegiate science competition.

**Physics Department:** Total no. of participating students: 44

Sr. No.	Name of the Students	Class	Project Title
1	Neha Borate	F.Y.BSc	Mainiture Guitar from matchbox
2	Shirin Barhanpure	F.Y.BSc	What happens to current carrying wire in Magnetic field
3	Ganesh Dhongade Prajyit Deshmukh Nikhil Kudale	F.Y.BSc	Electrical Motor

4	Dattatray Shinde Vijay Kanawade	F.Y.BSc	Solar System in 3D model
5	Snehal Sasane Momin Sabiya KanseSnehal	F.Y.BSc	Atmospheric Pressure
6	Mausami Narwal RupaliShelake Shailaja S.	F.Y.BSc	Projectile Motion
7	Prashant Pise Tushar Mukane	S.Y.BSc	Banking of road
8	Prakash Choudhari Pravin Pawar	S.Y.BSc	Satellite Communication
9	PrakashKulat Nikhil Bhalerao DhirajYadav	S.Y.BSc	Hydraulic Lift
10	ChatraliKulkarni ShivkanyaNakhte	S.Y.BSc	Metal Detector
11	BhagashreeKhetmalas KavitaKumbhar	S.Y.BSc	Rain Alarm
12	GauravGhrote Vrushali Sobale Sneha Parande	S.Y.BSc	Physics Survey
13	GauravGhrote	S.Y.BSc	Moon
14	Reshma Garud Pooja Ghalande	F.Y.BSc	Viscosity of Different hair oils
15	Yogesh Jamdade Swapnil Shevkari Dattatray Swant	S.Y.BSc	Effect of light intensity on stridulating of Black Cricket
16	Atul Sandesh	F.Y.BSc	Surface tension of different detergent
17	Ashibano Pathan	T.Y.BSc	Effect of radiation through mobile on Egg
18	Shweta Kulkarni Nachiket Kortikar	F.Y.BSc	Einstein curved spaced Theory
19	Mubina Nadaf	F.Y.BSc	Solar cell based on mobile charge
20	Pratiksha Chavan Ankita Mishra	F.Y.BSc	Black Holes
21	Swpnil Jagdale Sukadev Bhosale Mahesh Chopade	F.Y.BSc	Law of conservation of energy

## Statistics Department

Total Number of students undertook projects: 14

Class	Name of the participant	Title of the Project
F.Y. B.Sc.	1) Pratiksha Chavan 2) Ankita Mishra 3) Shweta Vidhate	Health analysis of students based on BMI
	1) Shivani Bhor 2) Sanjivani Kadam 3) Ankita Yadav	Hundred years of Indian Cinema
S.Y. B.Sc.	1) Swapnil Shevkari 2) Vrushali Sobale 3) Shivkanya Nakate 4) Sneha Parande 5) Amit Yadav 6) Bhagyashree Khetmals 7) Yogesh Jamdade 8) Kavita Kumbhar	Estimation of traffic density at signals in University circle.

## Zoology Department

Sr. no.	Students involved	Name of the project
T.Y. B.Sc.	Pankaj A. Gorule, Pravin Pawar, Sapana Herole, Ankita Sarade and Glory Thavasimuthu	Hearing Impaired Alarm Device
S.Y. B.Sc.	Yogita Gosavi, Arya Panikar, Varsha Vasudevan	To study the oral morphology of the <i>N. khavalchor</i> and its relation to lepidophagy
S.Y. B.Sc.	Vedanti Zadap, Priyanka Shinde, Rutuja Nalge	Isolation of the gut microflora of <i>N. khavalchor</i>
S.Y. B.Sc.	Kirti Kambale, Navneet Parihar, Avinash Dhiware	Morphological and Molecular Screening of chitin utilizers from the gut of <i>N. khavalchor</i>
S.Y.B.Sc.	Nitin Sawant	Study of regeneration in Planeria <i>Dugesia tigrina</i>
S.Y.B.Sc.	Sachin Bishnoi, FarukShaikh, Saurabh Satav, NihalChavan	Study of cellular signaling and regeneration in Planeria
S.Y.B.Sc.	SharwariSadawarte, Sayalikalankar, NeelamBorhade, Deepali Dhiware	Study of pray-predator interaction between <i>Clinotarsuscurtipus</i> and <i>Xenochrophispiscator</i> , common water snake

T.Y.B.Sc.	Pradeep Kumkar, Sushant Navrange, Kishor Sonawane	Photochemistry of the traditional medicinal plant, <i>Gnidia glauca</i>
T.Y.B.Sc.	Pradeep Kumkar, Siddesh Rajpure	Isolation and Purification of piscicidal compound from plant <i>Gnidia glauca</i>
T.Y.B.Sc.	NitinSawant, Sandip Tapkir and Pradeep Kumkar	Isolation and characterization of TTX producing bacteria from the gut of bicolored frog tadpoles.
T.Y.B.Sc.	Nitin Sawant and Pradeep Kumkar	Study of fish fauna of Hiranyakeshiriver, Amboli, Kolhapur
T.Y.B.Sc.	Nitin Sawant and Pradeep Kumkar, Kishor Sonawane	Karyotype analysis of some freshwater fishes of Mula and Mutha river Pune, Maharashtra.
T.Y.B.Sc.	Pankaj Gorule, Avadhesh Tiwari, Glory Thavasimuthu	Hydrobiology of Tungarly and Valvan Dam, Lonavala with special reference to seasonal flux in certain physic chemical parameters

The college had organised the event named as “Anubhuti” under which students participated and presented their different projects. The projects that were presented on behalf of the zoology department students were as below:

- i. **Project title: Hearing Impaired Alarm Device:**  
Project students: Pankaj Gorule, Pravin Pawar, Sapana Herole, Ankita Sarade and Glory Thavasimuthu, Class: T.Y.B.Sc.
- ii. **Project title: To study the oral morphology of the *N. khavalchor* and its relation to lepidophagy**  
Project students: Yogita Gosavi, Arya Panikar, Varshavasudevan, Class: S.Y.B.Sc.
- iii. **Project title: Isolation of the gut microflora of *N. khavalchor***  
Project students: Vedanti Zadap, Priyanka Shinde, Rutuja Nalge, Class: S.Y.B.Sc.
- iv. **Project title: Screening of chitin utilizers from the gut of *N. khavalchor***  
Project students: Kirti Kambale, Navneet Parihar, Avinash Dhiware, Class: S.Y.B.Sc.
- v. **Project title: Study of regeneration in *Planeria Dugesiatigrina***  
Project students: Nitin Sawant, Class: S.Y.B.Sc.
- vi. **Project title: Study of cellular signaling and regeneration in *Planeria*.**  
Project students: Sachin Bishnoi, Faruk Shaikh, Saurabh Satav, Nihal Chavan, Class: S.Y.B.Sc.
- vii. **Project title: Study of pray-predator interaction between *Clinotarsuscurtipus* and common water snake, *Xenochrophispiscator***  
Project students: Sharwari Sadawarte, Sayali kalamkar, Neelam Borhade, Deepali Dhiware, Class: S.Y.B.Sc.

- viii. **Project title: Photochemistry of the traditional medicinal plant, *Gnidia glauca*.**  
Project students: Pradeep Kumkar, Siddhesh Rajpure, Kishor Sonawane, Class: T.Y.B.Sc.
- ix. **Project title: Isolation and Purification of piscicidal compound from plant *Gnidia glauca***  
Project students: Pradeep Kumkar, Siddesh Rajpure, Class: T.Y.B.Sc.
- x. **Project title: Isolation and characterization of TTX producing bacteria from the gut of bicolored frog tadpoles.**  
Project students: Nitin Sawant, Sandip Tapkir and Pradeep Kumkar, Class: T.Y.B.Sc.
- xi. **Project title: Study of fish fauna of Hiranyakeshiriver, Amboli, Kolhapur.**  
Project students: Nitin Sawant and Pradeep Kumkar, Class: T.Y.B.Sc.
- xii. **Project title: Hydrobiology of Tungarly and Valvan Dam, Lonavala with special reference to seasonal flux in certain physic chemical parameters**  
Project students: Pankaj Gorule, Avadhesh Tiwari, Glory Thavasimuthu, Class: T.Y.B.Sc.

## 9. Inter-departmental Activities Conducted:

Various inter-departmental activities were conducted during the academic year 2013-14, particularly in the departments supported under the star college scheme of DBT. The activities include students' projects, inter-departmental uses of instruments and other facilities, Hands-on-Training programs conducted for the teachers for newly bought instruments both from DBT Star College funds as well as from DST-FIST funds. The details of activities are as follows:

1. The Workshops and Hand-on-Trainings conducted under the tag DBT STAR WORKSHOP and DBT STAR HANDS-ON-TRAINING PROGRAM by the departments supported by this scheme were interdepartmental in nature and students from various departments participated in all such activities.
2. Demonstrations and Hand-on-Trainings sessions were organized for newly procured as well as other instruments for the faculty members of all the science departments, for instance:
  - a. A one-day workshop on handling of fluorescent microscope for faculty members of Biotechnology and Microbiology Department, September 2013
  - b. A one-day workshop on Spectrophotometry for faculty members of Biotechnology, Microbiology, Botany, Chemistry and Zoology, December 2013.
  - c. A one-day workshop on handling of instruments such as Electrophoresis System, Gel Documentation (Imaging and Analysis) by the experts from Bio-Rad for faculty members of Biotechnology, Microbiology, Botany, Chemistry and Zoology, 26<sup>th</sup> April 2014
  - d. A one-day Demonstration-cum-hands on training of Microtome for faculty members of Biotechnology, Microbiology, Botany, Chemistry and Zoology, 29<sup>th</sup> November 2014
3. The guest-lectures under the tag *DBT STAR LECTURE SERIES* were conducted for the students of all the related departments.
4. Students carried out various inter-disciplinary and inter-departmental projects where guides were from two different departments.
5. Scientific Projects Competition *Anubhuti* was conducted combinely by all the science departments.
6. Out of these projects and models STAR PROJECTS were selected and certificates were distributed to them.
7. The industrial visits were also conducted for all the science departments on the same day to have an interdisciplinary approach.



**10. Qualitative Improvements due to DBT Support (please highlight 5 salient points)**

1. Significant infrastructural improvement in the supported departments.
2. More hands-on exposure to students and introduction of new practicals to understand theoretical concepts.
3. Opportunities generated for students for attending the lectures-delivered by the renowned Scientists/ Professors in their respective fields and practical sessions conducted under their supervision besides opportunities to interact with them.
4. Exposure to experimental-design and execution of projects, hence development of scientific aptitude in students.
5. New instruments and facilities resulted into human recourse development and overall improvement in teaching quality in the supported departments.
6. Increase in inter-departmental and inter-disciplinary activities in the science departments.

*Overall, the scheme has played an important role in increasing not only the inflow of students towards basic and life science subjects but also in attracting the high-ranked and academically-sound students in past two years, which is evident from the increased number of admissions, better results in their examinations and increasing number of students undertaking projects as well as are publishing their outcomes in the refereed journals.*

## 11. Strengths and Weaknesses of each Department (3 each)

### **Strengths**

*The college has grown tremendously in terms of infrastructure and facilities. The college has been re-accredited with 'A' Grade by NAAC, Bangalore, PG Science departments have received financial support from DST under FIST Program, has been the recipient of prestigious Best College Award from Pune University. The college has excellent facilities for undergraduate teaching and research, due largely to the DBT's Star College Scheme implemented at the college. The department-wise strengths are given:*

### **Biotechnology Department**

- i. Highly qualified and active-in-research faculty (7 PhDs and 2 research guides) in the department
- ii. High proportion of students opting for higher education and research in National Institutes and abroad
- iii. Availability of necessary equipments, labs (animal and plant tissue culture and bioinformatics lab with 20 internet-enabled computers exclusively for students) and separate departmental library with more than 1200 books and periodicals

### **Botany Department**

- i. Qualified faculty of the department.
- ii. Well-equipped labs including plant tissue culture and greenhouse facility
- iii. Academic environment in the department

### **Chemistry Department**

- i. Qualified, creative, and enthusiastic staff
- ii. Well-equipped and well-stocked laboratories
- iii. A separate and strong placement cell

### **Electronics Department**

- i. Qualified staff
- ii. Good team-work properly coordinated
- iii. MOUs with Training Institutes to increase the academia-industry interface.

### **Mathematics Department**

- i. A good Common Computing Facility
- ii. High ratio of students in co-curricular and extra-curricular activities
- iii. Good Team work and active staff members

### **Microbiology Department**

- i. Qualified staff from research & industrial background
- ii. Five well equipped laboratories
- iii. Well established placement cell

### **Physics Department**

- i. Well equipped laboratory and Departmental library.
- ii. Good rapport with students and personal attention to every student through remedial class especially for F. Y. B.Sc.
- iii. Enthusiastic and experienced staff.

### **Statistics Department**

- i. Dedicated, sincere and hardworking staff
- ii. Well equipped and improved laboratory facility (due particularly to DBT STAR college scheme)
- iii. Offers support to all other science departments for projects and

### **Zoology Department**

- i. Qualified and Competent teaching staff
- ii. Participation of students in various departmental activities
- iii. Environment suitable for extension and research activities

### **Weakness**

#### **Biotechnology Department**

- i. Overall drop in number of students opting for life sciences
- ii. Students from middle academic strata opting for life sciences
- iii. Placement activities should be increased to attract more students

#### **Botany Department**

- i. The research activities should be increased in the department
- ii. Number of research projects carried out by the students should be increased.

#### **Chemistry Department**

- i. Lower academic record students opting for basic sciences
- ii. Need of research activities to be enhanced further for the students

#### **Electronics Department**

- i. Lower academic record students opting for basic sciences
- ii. Need to further increase the academia-industry interaction

#### **Mathematics Department**

- i. Need of research activities to be enhanced further
- ii. More students-centric activities should be organized

#### **Microbiology Department**

- i. Scope for further improvement in involvement of UG students in research.
- ii. Requirement for more copies of reference books for UG students.

#### **Physics Department**

- i. Scope for further enhancement in research activities
- ii. more activities should be conducted to attract students to study physics

**Statistics Department**

- i. Poor attendance records of first year students in theory classes as compared to practical sessions.
- ii. To further increase the students-centric activities including hands-on-trainings.

**Zoology Department**

- i. Overall drop in number of students opting for life sciences
- ii. Number of projects undertaken by the students should be increased

**12. Problems Faced, if any, in implementation of the Program and Utilization of DBT Grant (in two-three lines)**

The funds should be released for 2014-15.

**13. DBT Grant Utilization:**

**A) Non-recurring (Equipment):**

**Biotechnology Department**

S. No.	Equipment Name ( Model)	Qty	Cost (Rs.)	Date of order placed	Date of Receipt/ installation	Working / not working
1	Electronic Balance Make – Contech Model No – CA-234 Accuracy – 0.0001 g	1	59625/-	05.12.2012	03-01-2013	Working
2	Refrigerator Make – Samsung Capacity – 600 lit	1	76500/-	20-09-2012	22-09-2012	Working
3	Vertical Mini Gel System Make- Bangalore Genei Cat No 106680	3	20435/-	20.09.2012	22-09-2012	Working
4	Vertical Dual Midi Gel Make – Bangalore Genei Cat No 3106782GB	2	25516/-	20.09.2012	22-09-2012	Working
5	Micropipette Variable Volume 1 – 10ul 10 – 100ul 100 – 1000ul 1000 – 5000ul Make -Tarson	6 6 6 1	72232/-	22.09.2012	01-10-2012	Working
6	Liquid Nitrogen cryocan Model – BA-11	1	24373/-	20.09.2012	28-09-2012	Working
7.	Microscope Magnus Monocular Olympus HB model	5	66951/	31.12.2013		Working
8.	Microscope KG-5 B2100Micron	5	29109/-	28.01.2014		Working
9.	Vacuum Regulator for Rota Evaporator	1	5063/-	09.12.2013	24.12.13	Working
10.	CO <sub>2</sub> Cylinder with regulator & Orbital Shaker Incubator	1 1	83,041/-	12.3.2014	24.3.14	Working

## Botany Department

S. No.	Equipment Name	Qty	Cost (Rs.)	Date of order placed	Working/ not working
1.	Mini Vertical Gel Electrophoresis Unit	1	7,800	12/12/2012	Working
2.	Fixed type power pack	1	4,500	12/12/2012	Working
3.	Mini Vertical Gel Electrophoresis	1	7800	12/12/2012	Working
4.	Monocular Microscope	10	51750	21/03/2014	Working
5.	Digital pH meter	1	7800	21/03/2014	Working
6.	Lab Incubator	1	24750	21/03/2014	Working
7.	Stop Clock	1	690	29/04/2013	Working
8.	Inoculation Chamber	1	14500	11/12/2012	Working
9.	Magnifying lenses with stand	1	2720	11/12/2012	Working
10.	Charts (PVC)	9	4815	11/12/2012	Working
11.	Autoclave vertical, Medica Instruments	1	98888	21/03/2014	Working

## Chemistry Department

S. No.	Equipment Name (Model no.)	Qty	Cost (Rs.)	Date of order placed	Working/ not working
1.	Burette stand set	100	49410	20/9/12	Working
2.	Digital pH meter	02	12600	5/1/13	Working
3.	Magnetic stirrer	04	15372	5/1/13	Working
4.	Centrifuge Machine	06	20628	5/1/13	Working
5.	Digital conductivity meter	02	12600	5/1/13	Working
6.	Photoelectric Colorimeter	02	14400	5/1/13	Working
7.	Digital Potentiometer	02	9000	5/1/13	Working
8.	Digital Weighing balance	02	15300	5/1/13	Working
9.	Abbe refractometer	01	17552	5/1/13	Working
10.	hot air oven Digital temp	01	20160	5/1/13	Working
11.	Muffle furnace Digital	01	18180	5/1/13	Working
12.	Water bath	01	11880	5/1/13	Working
	VAT		20959		Working
13.	Sodium press machine	01	12375	28/2/13	Working
14	Sodium press machine	1	12375	28/2/13	Working
15	Four stage vacuum filtration assembly	1	46530	27/8/2014	Working
16	Rocker vacuum pump	2	31365	27/3/14	Working
17	Jet vacuum Pump	1	21963	28/3/14	Working
18	Digital balance	2	17618	28/3/14	Working
19	Thermostatic water bath	3	21870	28/3/14	Working
20	UV cabinet with dual wavelength	1	7875	28/3/14	Working
21	Refrigerator 210 L	1	15180	28/3/14	Working

## Electronics Department

S. No.	Equipment Name (Model no.)	Qty	Cost (Rs.)	Date order placed	Working /Not working
1.	Cathode Ray Oscilloscope	4	82,000.00	26/09/2012	Working
2.	Function Generator	4	38,000.00	26/09/2012	Working
3.	DC Power Supply	4	17,800.00	26/09/2012	Working
4.	Digital Multimeter	10	28,000.00	26/03/12	Working
5.	Antenna (characteristics) Trainer Kit	1	51,500.00	26/03/12	Working
6.	GSM (Global System for Mobile) Phone System	1	68,250.00	26/03/12	Working
7	Cathode Ray Oscilloscope	a)Prowiz:2 b)Tirupati Ent.:2 c)Prowiz: 2	a)43000/- b)71610/- c)43000	a)18/10/13 b) 20/12/13 c)28/3/14	Working
8	Function Generator	a)Prowiz:2 b)TirupatiEnt:2 c) Prowiz : 2	a) 38000/- b)14200/- c)16700/-	a)18/10/13 b) 20/12/13 c)28/3/14	Working
9	Digital Storage Oscilloscope	1	23000/-	20/12/13	Working
10	Digital Multimeter	10	25312/-	27/3/14	Working
11	Analog meters	10	4000/-	26/3/14	Working
12	Resistance Box	3	6600/-	26/3/14	Working
13	Dimmer Stat	1	1800/-	26/3/14	Working
<b>Total (after VAT and discounts)</b>			<b>493443/-</b>		



**Mathematics Department**

<b>Sr. No.</b>	<b>Equipment Name (Model No.)</b>	<b>Qty</b>	<b>Cost (Rs.)</b>	<b>Date of Order Placed</b>	<b>Date of Receipt/ Installation</b>	<b>Working / not working</b>
1	Desktop Intel core i3 Desktop with Intel core i3 Processor Intel chipset Motherboard 4GB DDR III Ram 250GB SATA Hard Disk DVD Writer SATA Logitech keyboard and Mouse 18.5" LCD Monitor VIP cabinet with SMPS	15	3,58,500	10/09/2012	21/09/2012	Working
2	Printer EPSON LX 300	02	17,000	01/09/2012	03/09/2012	Working
3	Symbolic Math Toolbox	10	72,570	27/03/2014	31/03/2014	Working

## Microbiology Department

Sr. No.	Equipment name	Qty	Cost (Rs.)	Date of order placed	Date of receipt /installation	Working / not working
1	Mini Electrophoresis unit and power pack Leveling Table	1	10907/-	24-1-13	15-2-13	Working
2	Electronic digital Balance & Digital pH meter	1 + 1	28,688/-	21-1-13	4-2-13	Working
3	Binocular Olympus make	2	48,825/-	24-1-13	11-3-13	Working
4	Orbital Shaker Incubator DBK Make	1	58,410/-	15-2-13	26-3-13	Working
5	Digital colorimeter CL-157 Elico make	2	22,871/-	21-1-13	4-2-13	Working
6	Tarson Micropipettes 1-10ul =3Nos. 10-100ul=3Nos. 100-1000ul=3Nos.	3 each type	33,625/-	22-9-12	1-10-12	Working
7	Borsoil Miniature Micropipettes (cap. 5, 10, 100, 200, 500, 1000 ul)	1, 1,6, 2, 2, 10	5,756/-	30-3-13	30-3-13	Working
8	Digital pH meter	1	6,278/-	21-1-13	4-2-13	Working
9	Miniature micropipette(5.0ul )	2	5917/-	31/10/13	28-11-2013	Working
10	Miniature micropipette(10.0ul )	2				Working
11	Miniature micropipette(100.0ul )	6				Working
12	Miniature micropipette(200.0ul )	3				Working
13	Miniature micropipette(500.0ul )	4				Working
14	Miniature micropipette(1000.0ul )	2				Working
15	Miniature micropipette(200.0ul )	1				299/-
16	Miniature Micropipette (20ul)	3	898/-	21/3/2014	27 -03-2014	Working
17	Pipette controller	3	7178/-	21/3/2014	24-03-2014	Working
18	Electronics digital Balance Battery operated (CT-300)	2	16707/-	31/12/13	07-02-2014	Working
19	Desiccators Glass(300mm)	1	13252/-	31/12/13	09-01-2014	Working
20	Cyclomixer CM-101	2	8843/-	31/12/13	07-01-2014	Working
21	Magnus student Monocular Microscopes 10X, 40X, 100X HB-model	5	66952	31/12/13	13-01-2014	Working
22	Camera, Attachment for microscope MICRO IMAGE PROJECTION SYSTEM SERIE Model MIPS-USB	1	36311/-	21/1/2014	25-03-2014	Working
23	Microscope KG-5 10x 40X B2100X	5	29109/-	16/1/2014	28-01-2014	Working
24	Refrigerator H-6' L-4',d -2' stainless body total top side compressor unit two door glass, temp adjustment system	1	76500/-	1/3/2014	23-04-2014	Working
25	Servo controlled voltage stabilizer 3kva VS03	2	25875/-	1/3/2014	26-03-2014	Working

## Physics Department

S. No	Name of the Instrument (Model no.)	Qty	Cost (Rs.)	Date of order placed	Date of Receipt/ installation	Working/ not working
1.	Digital storage oscilloscope (D36100CA)	01	65488	23/10/12		Working
2.	CRO 20MHz dual channel function generator MSG2M	01	19372			Working
3	Function Generator	02	17955			Working
4.	OPAMP inverting and non inverting kit	01	1721			Working
5.	Coulombs law demonstration ( NV 6012 )	01	7819	08/2/13		Working
6.	Hysteresis loop tracer (NV 6108 )	01	27572			Working
7.	Planck's constant ( NV6025)	01	9401			Working
8.	Quinke's tube	01	4068			Working
9.	DC power supply digital	02	9011			Working
10.	Optical fiber communication 2502 tech book	01	25764			Working
11	Audiometer Gi9a3	01	49250			Working
12	R F Generator (150 MHz ) (Scientech 1500)	01	8100	24-12-13	15-2-14	Working
13	Digital Vernier	02	2800	24-12-13	15-2-14	Working
14	Digital Micrometer Screw Gauge	02	7200	24-12-13	15-2-14	Working
15	Equalizer	01	7560	24-12-13	15-2-14	Working
16	Tunning Fork	01	2650	24-12-13	15-2-14	Working
17	Barometer with case	01	9250	24-12-13	15-2-14	Working
18	Amplifier	02	11,000	24-12-13	27-12-13	Working
19	CRO 20 MHz dual channel (3702)	01	21500	26-3-14	28-3-14	Working
20	Permanent magnet dc generator (GEN EC 1415)	01	4700	27-3-14	28-3-14	Working
21	Ultrasonic Distance meter	01	4900	24-12-13	28-3-14	Working
22	Temperature and Humidity measurement	01	4700	24-12-13	28-3-14	Working
23	6 inch spectrometer	03	19800	27-3-14	29-3-14	Working
24	Dimmerstat	01	1800	27-3-14	29-3-14	Working
25	Reading telescope	02	3600	27-3-14	29-3-14	Working
26	BP apparatus	01	1650	27-3-14	29-3-14	Working
27	Travelling microscope	02	13200	27-3-14	29-3-14	Working
28	Lee's method apparatus	01	4200	27-3-14	29-3-14	Working
29	Surface tension by Jagers method apparatus	01	1600	27-3-14	29-3-14	Working
30	Viscosity by Poiseuilles method	01	1800	27-3-14	29-3-14	Working
31	Photoelectric Colorimeter (251)	01	7500	27-3-14	29-3-14	Working
32	Magnetic stirrer	01	5000	27-3-14	29-3-14	Working
33	LCR meter	01	17000	27-3-14	29-3-14	Working
34	Electronic balance	01	1800	27-3-14	29-3-14	Working
35	Dc voltmeter, ammeter	05	2000	27-3-14	29-3-14	Working
36	Refractometer	01	27500	27-3-14	29-3-14	Working
37	Atomic model set	01	2800	27-3-14	11-6-14	
38	Quartz, Nicol prism	02	10750	27-3-14	11-6-14	Working
39	Green, Red diode laser	02	3300	27-3-14	11-6-14	Working
40	Optical bench	01	3500	27-3-14	11-6-14	Working
41	Grating 500,1000 lines per inch	02	1900	27-3-14	11-6-14	Working
42	Newton's ring apparatus	01	750	27-3-14	11-6-14	Working
43	Achromatic lens	01	750	27-3-14	11-6-14	Working
44	Laser beam analyzer	01	6500	27-3-14	11-6-14	Working

**Statistics Department**

<b>S. No.</b>	<b>Equipment Name (Model no.)</b>	<b>Quantity</b>	<b>Cost (Rs)</b>	<b>Date of order placed</b>	<b>Date of Receipt/installation</b>	<b>Working/not working</b>
1)	SPSS Software	10 users	289501/-	21/02/2014	20/03/2014	Working
2)	PC'S	8	204000/-	21/02/2014	20/03/2014	Working

## Zoology Department

S. No	Equipment Name (Model no.)	Qty	Cost in Rs.	Date of order placed	Date of receipt / installation	Working / not working
1.	Mini vertical gel electrophoresis – VEP 170301	01	7800	23.12.12.	10/01/2014	Working
2.	Midi vertical gel electrophoresis – VEP 170302	01	8900	23.12.12.	10/01/2014	Working
3.	Variable power pack – BE/VPP/1212	01	29500	23.12.12.	10/01/2014	Working
4.	Magnetic Stirrer – 1 MLH REMI	02	10350	27.12.12.	10/01/2014	Working
5.	Digital pH meter – EQ 610	01	6000	27.12.12.	10/01/2014	Working
6.	Haemocytometer – ROHEM	10	9000	27.12.12.	10/01/2014	Working
7.	B.P. Apparatus – BPMR – 112	05	8575	29.12.12	10/01/2014	Working
8.	Eon-pipette – VV0005	01	3999	23.12.12.	10/01/2014	Working
9.	Eon-pipette – VV0010	01	3999	23.12.12.	10/01/2014	Working
10.	Eon-pipette – VV0020	01	3999	23.12.12.	10/01/2014	Working
11.	Eon-pipette – VV0100	01	3999	23.12.12.	10/01/2014	Working
12.	Digital calliper, Mitutoyo, Japan, 500-197	01	11419	22/02/14	24/03/ 2014	Working
13	Centrifuge, R-248M, REMI	01	10688	22/02/14	25/03/ 2014	Working
14	1040 Spinwin Micro centrifuge MC-04 TARSON	01	63591	28/02/14	25/03/ 2014	Working
15	UV trans-illuminator gel viewing UVT-170601	01	23017	13/02/14	04/03/ 2014	Working
16	Refrigerator SAMSUNG RS21HSTPN	01	87750	16/01/14	24/01/ 2014	Working
17	Microwave Oven, GODREJ	01	5850	16/01/14	04/02/2014	Working
18	Spinix vortex shaker, SPINIX	01	7607	16/01/14	04/02/2014	Working
19	Spinix vortex shaker spare micro tube insert SPINIX	01	782	16/01/14	04/02/2014	Working
20	Heating Mantle BTI-19, Bio Techniques India	01	1300	16/01/14	04/02/2014	Working
21	Finpipette F1 GLP kit-2 0.2 to 1000 ul	01	54887	16/01/14	08/02/2014	Working
22	Soxhallet Extraction Apparatus Borosilicate Glasswares 1000 ml	01	24221	16/01/14	08/02/2014	Working
23	Leica RM-2125 Manual Rotary Microtome	01	445000	26/03/14	22/02/2014	Working

**B) Recurring. (Please prepare a table for sanctioned amounts and total expenses under different heads – list of items purchased is not necessary)**

<b>Budget Head</b>	<b>Unspent balance carried forward from previous year (Rs.)</b>	<b>Grants received from DBT during the year (Rs.)</b>	<b>Expenditure (excluding commitments) incurred during the year 2013-14 (Rs.)</b>
Recurring	7,60,849	Nil	6,72,854

## Minutes of the Advisory Committee Meeting held on 03/08/2014

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Minutes of DBT Star College Scheme Advisory Committee Meeting held on 03/08/2013, 11:00 am  
Venue: IQAC Room


A meeting was held on 03/08/2013, Saturday at 11:00 am in IQAC room to discuss the progress made in first year utilization of funds, activities carried out under the scheme in participating departments, and to improve the activities further for effective implementation of the program.

Following Committee members were present in the meet:

1)	Dr. Sanjay Kharat	(Chairman)	<i>[Signature]</i>
2)	Dr. G.S. Chincholikar	(External Expert)	<i>[Signature]</i>
3)	Dr. Kishor Kodam	(External Expert)	<i>[Signature]</i>
4)	Dr. Vinay Kumar	(Coordinator)	<i>[Signature]</i>
5)	Mrs. Chhaya Abnave	(Physics)	<i>[Signature]</i>
6)	Mrs. Varsha M. Bapat	(Electronics Dept)	<i>[Signature]</i>
7)	Mrs. Sneha Ogale	(Microbiology)	<i>[Signature]</i>
8)	Dr. Raval Prachi	Botany	<i>[Signature]</i>
9)	Dr. M.S. Kulkarni	Chemistry	<i>[Signature]</i>
10)	Dr. Amita A. Dharmadhikari	Statistics	<i>[Signature]</i>
11)	Dr. Geeta Mawal	Biotechnology	<i>[Signature]</i>

*[Signature]*  
CO-ORDINATOR  
DBT - STAR COLLEGE SCHEME  
PES'S MODERN COLLEGE OF ARTS SCIENCE &  
COMMERCE, GANESHKHIND, PUNE-53.

*[Signature]*  
Principal  
Modern College of Arts, Science  
& Commerce, Ganeshkhind, Pune-53.



Minutes of the Advisory Committee Meeting held on 24/09/2013

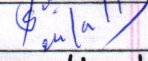
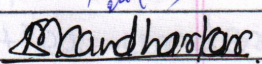
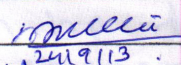
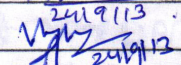
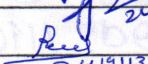
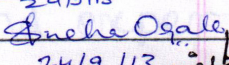
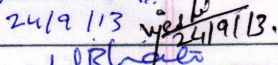
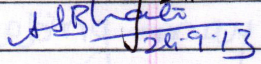
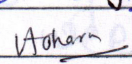
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Minutes of DBT - star college scheme committee meeting held on 24/09/2013 at 12-30 p.m. venue: - IQAC Room.

A meeting was held on 24/09/2013 Tuesday at 12-30 p.m. in IQAC room to discuss the preparation of manual, activities to be carried out under the scheme, feedback of activities, Purchasing of non-Recurring items.

Following committee members were present for the meeting

- 1) Principal Dr. Sanjay Kharat - 
- 2) Mrs. Swabi Kandharkar - 
- 3) Dr. Madhuri Kulkarni - 
- 4) Dr. Vinay Kumar 
- 5) Dr. Raval Beachi P. 
- 6) Mrs. Sneha Ogale 
- 7) Mrs. Varsha Joshi 
- 8) Dr. Bhatankar S.S. 
- 9) Dr. Amita A. Dharmadhikari 

- Minutes: -
- ① Prepare manual booklet related with, practical which are proposed and ongoing in the Department
  - ② Arrange lectures by experts from educational, research institutes.
  - ③ Visit to educational institutes.
  - ④ Projects and student activities like Quiz





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② Purchase of the department and of non-recurring items were discussed.



**CO-ORDINATOR**  
**DBT - STAR COLLEGE SCHEME**  
**PES'S MODERN COLLEGE OF ARTS SCIENCE &**  
**COMMERCE, GANESHKHIND, PUNE-53.**

**Principal**  
**Modern College of Arts, Science**  
**& Commerce, Ganeshkhind, Pune-53**

① Preparation of departmental manual booklets related with practical work and preparing in the department. Arrangement of experts for project work. Visit to educational institutions for project work.

Minutes of the Advisory Committee Meeting held on 20/05/2014

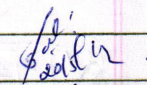
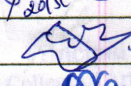
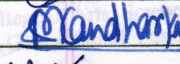
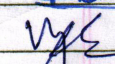
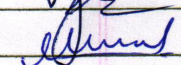
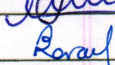
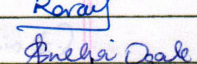
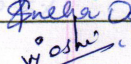
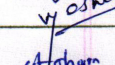
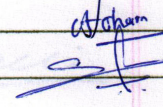
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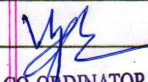
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Minutes of Meeting Conducted for  
DBT Star College Scheme - Progress  
Made and Information to be furnished to  
DBT

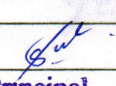
A meeting held on 20/05/2014 at 12:00 noon at TQAC Room. Dr. S.G. Deshpande, Scientist, NCL has also attended the meeting as National Advisor for the Scheme. The progress under the scheme, made by the supported departments was discussed. The questionnaire received from DBT for furnishing information to DBT was discussed in detail.

Following members were present for the meeting.

- |    |                            |                         |   |
|----|----------------------------|-------------------------|---|
| 1) | Dr. Sanjay Khasat          | Principal / chairman    |   |
| 2) | Dr. S.G. Deshpande         | Advisor                 |  |
| 3) | Prof. S. Kondharkar        | Vice principal, Science |  |
| 4) | Dr. Vinay Kumar            | Coordinator             |  |
| 5) | Dr. Geeta Monmal           | Bio Tech                |  |
| 6) | Dr. Raval Prachi P.        | Botany                  |  |
| 6) | Prof. Mrs. Sneha Ogale     | Microbiology            |  |
| 7) | Prof. Varsha Joshi         | Physics / Electronics   |  |
| 8) | Dr. Amita A. Dharmadhikari | Statistics              |  |
| 9) | DR Shakeria Inamdar        | Dept Zoology            |  |

  
CO-ORDINATOR

DBT - STAR COLLEGE SCHEME  
PES'S MODERN COLLEGE OF ARTS SCIENCE &  
COMMERCE, GANESHKIND, PUNE-53.

  
Principal  
Modern College of Arts, Science  
& Commerce, Ganeshkhind, Pune-53.



Minutes of the Meeting held on 31/12/2014


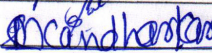



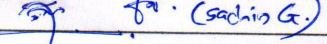

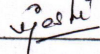
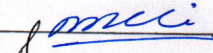

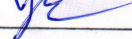
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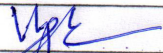
Minutes of meeting conducted for DBT Star College Scheme - to prepare and submit Annual Progress Report

A meeting held on 31/12/2014 at 3:00 pm at IQAC room for preparing detailed annual progress report to be submitted to DBT, New Delhi at the earliest. Principal, Vice-Principal (Science), Overall Coordinator and Departmental Coordinators discussed various activities conducted and progress made so far by each department.

Following members of faculty / Advisory Committee attended the meeting

- 1) Dr. Sanjay Kharat Principal/Chairman 
- 2) Prof. S. Kondhorkar  Modern College of Arts, Science & Commerce, Ganeshkhind, Pune.
- 3) Prof. P. P. Raval 
4. Dr. R. Gupta 
5. Mrs. Sawane 
6. Dr. S. A. Inamdar 
7. Dr. A. A. Dharmadhikari (Stats) 
8. Mrs. Varsha Joshi (Physics) 
9. Dr. Madhusai & Kulkarni (Chemistry) 
10. DR. S. A. Inamdar 
11. Dr. Vinay Kumar 

It was unanimously decided in the meeting to submit the progress report by 03/01/2015 from all the supported departments.



CO-ORDINATOR  
DBT - STAR COLLEGE SCHEME  
PES'S MODERN COLLEGE OF ARTS SCIENCE &  
COMMERCE, GANESHKHIND, PUNE-53



## Format for Students' Feedback on the Program



Progressive Education Society's  
 Modern College of Arts, Science and Commerce, Ganeshkhind, Pune  
*DBT Star College Scheme*

Students' Feedback
--------------------

1. Name of the Department:
2. Name of the student:
3. Class: Roll No.:
4. Are you aware of the *DBT Star College Scheme* implemented at the college?
  - a. Yes b. No
5. Did you experience the increase in the availability of equipments which are being handled in-person?
  - a. Yes b. No
6. Comment on the availability of chemicals, consumables and glassware
  - a. Insufficient b. Sufficient
7. Did you experience the increase in students-teacher interaction?
  - a. Yes b. No
8. Are you aware that besides curriculum, new practicals for widening of knowledge horizon are being conducted?
  - a. Not aware b. Aware
9. Training / hands-on-training programs conducted under this scheme
  - a. 0-2 b. 2-4 c. 4-5
10. No. of lectures of eminent scientists and laurels organized under this scheme
  - a. 0-5 b. 5-10 c. 10-15
11. Were you exposed to advanced equipments and techniques in fundamental and applied sciences?
  - a. Yes b. No
12. Did you experience an increase in awareness and exposure to the local environmental and biodiversity related issues?
  - a. Yes b. No
13. Does this scheme help to participate in various competitions organized on scientific themes?
  - a. Yes b. No
14. Do you think that this scheme leads towards overall development of students?
  - a. Yes b. No
15. Are you satisfied with *DBT Star College Scheme*?
  - a. Yes b. No
16. Suggestions, if any?

Signature of the student

Pictorial representation of some activities carried under Star College Scheme

