

First year Progress report by colleges supported under DBT Star College Scheme (2012-13)

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First year Progress report by colleges supported under DBT Star College Scheme (2012-13)

- 1) **Name of the College:** Progressive Education Society's
Modern College of Arts, Science and Commerce,
Ganeshkhind, Pune – 411 016
(Affiliated to University of Pune, Pune)
- 2) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**
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Departmental Coordinators:

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- 2) **Department of Botany**
Dr. Raval Prachi,
Associate Professor and Head,
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- 3) **Department of Chemistry**
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- 4) **Department of Electronics**
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- 5) **Department of Mathematics**
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Ph. No.: 020-25634021
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- 6) **Department of Microbiology**
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- 8) **Department of Statistics**
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Department of Statistics
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- 9) **Department of Zoology**
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Designation: Asst. Professor
Department of Zoology
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3) List of courses (B.Sc./M.Sc./PG Diploma, certificate etc) run by different participating departments:

S. No.	Name of the Department	Courses Run
i.	Biotechnology	BSc, MSc
ii.	Botany	BSc
iii.	Chemistry	BSc, MSc
iv.	Electronics	BSc
v.	Mathematics	BSc
vi.	Microbiology	BSc, MSc, PhD
vii.	Physics	BSc
viii.	Statistics	BSc
ix.	Zoology	BSc

4) Advisory committee meeting:

A) Constitution of advisory committee:

- | | | |
|---|--------------------------|--------------------------|
| 1. Dr. Sanjay Kharat | Principal | Chairman |
| 2. DBT Representative | (Technical Expert) | Member |
| 3. DBT Representative | (Financial Expert) | Member |
| 4. Dr. G. S. Chinchani | External Expert | Member |
| Formerly Prof. of Botany
Coordinator, SET Examination
University of Pune,
Pune – 411 007 | | |
| 5. Dr. K. M. Kodam | External Expert | Member |
| Associate Professor,
Department of Chemistry
University of Pune,
Pune – 411 007 | | |
| 6. Dr. Vinay Kumar | Course Coordinator | Member Secretary |
| 7. Departmental Coordinators: | | |
| 1. Mrs. S. Kandharkar | Departmental Coordinator | Mathematics Department |
| 2. Dr. Prachi Rawal | Departmental Coordinator | Botany Department |
| 3. Mrs. S. Sontakke | 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. Varsha Bapat | Departmental Coordinator | Electronics Department |
| 9. Dr. A. Dharmadhikari | Departmental Coordinator | Statistics Department |

B) Advisory committee meeting conducted after implementation of scheme: if yes please give the dates and enclose the minutes.

Minutes enclosed

DEPARTMENT-WISE PROGRESS REPORTS

1. DEPARTMENT OF BIOTECHNOLOGY

- 1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Dr Rekha Gupta
Head,
Department of Biotechnology
Modern College of Arts, Science and Commerce,
Ganeshkhind, Pune
Ph. No. -020-25634021/231
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- 2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

Class	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
2011-12					
FY. B.Sc	50	44	88	01	Nil
SY .B.Sc		34	100		Nil
TY.B.Sc		35	89		Nil
MSc I	55	24	100		Nil
MSc II		24	96		Nil
2012-13					
FY. B.Sc	48	58	94.6	01	Nil
SY.B.Sc		32	100		Nil
TY.B.Sc		36	77.14		Nil
MSc I	55	24	100		Nil
MSc II		24	100		02

- 3) **Activities carried out during the year (department wise):**

A) Student activities

i. Summer school

- a. One student was selected for Summer Training program at National Center for Cell Sciences, Pune.

- b. Five students (Omkar Indari, Gayatri Mulik, Pooja Kakade, Snehal Paigude and Manish Gidwani) underwent a Summer Training Program at Serum Institute of India, Pune
- c. One student was selected for summer training at ACTREC, Tata Memorial Centre, Mumbai

ii. Industrial visit

- a. SYBSc: Visit to Vasantdada Sugar Institute, Manjari, on 12th February 2013
- b. TYBSc: Visit to K特拉aj Dairy on 7th September 2012
- c. TYBSc: Visit to Vasantdada Sugar Institute, Manjari, on 12th February 2013

iii. List of project taken by students

1. Projects on basic biological and physiological processes in various plants and microbial species under natural and adverse environmental conditions.
2. Effect of salt stress on biological and physiological processes in various plants.
3. Effect of perchlorate stress on biological and physiological processes in various plants.

iv. Excursions

- a. FYBSc: Mahabaleshwar (September 2012)- visit to Bee Research Institute and Mapro food processing industries.

B) Teachers activity

i. Workshop, seminar conducted / attended

- i. Dr Rekha Gupta and Dr Nivedita Das- attended- One day workshop on implementation of credit system for post graduation at Garware college ,Pune

ii. Training course conducted / attended

Nil

iii. Guest lectures (Please mention Name, Designation, host institute of guest faculty invited)

- a. A lecture on career opportunity in Food Industry, by Ms. Meghana Patange, Coordinator and Administrating Manager, CareerVarsity, Pune

4) List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:

List of New Practicals introduced during 2012-13 for BSc Students:

1. Study of Mitosis
2. Study of Meiosis
3. Production of Biofertilizers
4. Lab-scale production of mushroom
5. Establishment and maintenance of animal cell culture

5) Number of students taking project vs. total number of students. Please give list of projects department- wise during the support period:

Total 35 out of 35 students of TYBSc carried out projects. The list is as follows:

Sr No.	Exam Seat No.	Name of the student	Project Title	Project Guide
1	30391	Swapnil Choudhari	'Bacterial decolourisation of acid magenta by bacteria isolated from soil suspension'.	Ms. Aditi Deshpande
2	30392	Ganesh Honwad	'Study on Regeneration of anuran tail (<i>Microhylaornata</i>)'	Dr. Nivedita Das

3	30393	Tanuja Inamdar	'Study of indigenous LAB as probiotic organisms.'	Mr. Pranav Tembe
4	30394	Harshal Kalokhe	Study of anti-oxidant activity of <i>Calotropis gigantean</i>	Dr Vinay Kumar
5	30395	Maria Adhikary	Isolation, characterisation and application of bioluminescent bacteria from marine fish and detection of water contaminants by using bioluminescent bacteria.	Mrs. Sneha Mahlunkar Misal
6	30396	Shrikant Ogale	'Antioxidant activity of edible plant'	Dr. Snehal Gite
7	30397	Lalita Panalkar	'Study of somatic embryogenesis and to prepare artificial seed and its preservation'.	Dr. Geeta Morwal
8	30398	Pankaj k Neeraj	Isolation and characterization of antibiotic producing lactic acid.	Mr. Pranav Tembe
9	30399	Bhagyashri patil	To screen of soil for presence of perchlorate in Pune region	Dr. Rekha Gupta
10	30400	Varsha Balwadkar	'Studies on Beta galactosidase of indigenously isolated LAB.'	Mr. Pranav Tembe
11	30401	Chaitrali Adhav	Effect of radio waves on flowering plants.	Dr. Geeta Morwal
12	30402	Sagar Arya	'Tissue culture studies on medicinal plant <i>Helicteres isora</i> L.'	Dr. Vinay Kumar
13	30403	Sachin Bangal	To screen of plant for presence of perchlorate in Pune region	Dr, Rekha Gupta
14	30404	Prajakta Bengale	Cyto-toxicity of food colours.	Dr. Geeta Morwal
15	30405	Akshara Bodas	'Effect of neem extract on <i>Tribolium castaneum</i> and <i>in silico</i> analysis of IGR action and ligand –receptor binding using molecular analysis and modelling.	Mr. Pinakin Wagh
16	30406	Jasoda Choudhari	Effect of FM radio frequency on plants growth.	Dr. Geeta Morwal
17	30407	Swarda Deo	Effect of etizolam and clonazepam on <i>Tribolium castaneum</i> :Comparative analysis of benzodiazepines	Mr. Pinakin Wagh
19	30409	Komal Deshpande	Effect of venlafaxine on chick embryogenesis.	Mr. Pinakin Wagh
20	30410	Sandeep Dhir	Effect of Azadirachtin on chick embryo	Mr. Pinakin Wagh
21	30411	Pranali Jagdale	'Anti-microbial activity of medicinal plant against dental caries an in-vitro study.'	Dr Rekha Gupta
22	30412	Chinamayee Kakirde	Effect of Lufenuron on Red Flour Beetle and <i>in silico</i> analysis of the Ligand-Receptor Interaction by Molecular Modelling	Mr. Pinakin Wagh
23	30413	Richa Khanna	Characterization and identification of bacteria isolated from Himalayan region	Ms. Aditi Deshpande
24	30414	Aditee Khot	Isolation, optimisation and keratinase production from chicken feathers.	Dr. Nivedita Das
25	30415	Pradeep kumkar	Molecular diversity and enzyme activity of gut bacterial flora of hillstream fishes	Dr. Sanjay Kharat
26	30416	Priyanka Mazire	'Study of somatic embryogenesis and to prepare artificial seed and its preservation'.	Dr. Geeta Morwal
27	30417	Sushant Navarange	'Biodegradation of dye acid magenta using bacteria isolated from soil'	Ms. Aditi Deshpande
28	30418	Poonam Sashidhar	'Tissue culture studies on medicinal plant <i>Helicteres isora</i> L.'	Dr. Vinay Kumar
29	30419	Priyanka Yargattikar	Isolation, characterisation and application of bioluminescent bacteria and enzyme responsible for bioluminescence	Mrs. Sneha Mahlunkar Misal
30	30420	Siidhesh Rajpure	Anti-cholesterol acitivity.	Dr. Snehal Gite
31	30421	Krushna Sonar	'Identification and Phylogenetic comparison of <i>Wolbachia</i> species in Indian Spiders(<i>Aracnida</i>) & Insects(<i>Insecta</i>)	Dr. Yogesh Shouche Mr. Pinakin Wagh

32	30422	Kishor Sonawane	Development of karyotyping and chromosome banding of fishes found in Western Ghats	Dr. Sanjay Kharat
33	30423	Priya Takwale	A study on apoptosis of regressing and pre-regressing anuran tail (<i>Microhyla ornate</i>)	Dr. Nivedita Das
34	30424	Prasanna Tare	Isolation characterisation and identification of gut microflora from spider.	Mr. Pinakin Wagh Dr Yogesh Shouche
35	30425	Shruti Tembe	Production and purification of biodiesel from chicken feathers.	Dr. Nivedita Das

5) Interdepartmental activities conducted:

Interdepartmental project – Biotechnology and Electronics department

6) Qualitative improvements due to DBT support (please highlight 5 salient lines)

1. Noticeable infrastructural improvement in the department.
2. More hands-on exposure to students and introduction of new practicals to understand theoretical concepts.
3. New instruments and facilities resulted into human recourse development.
4. Improvement in quality of research projects taken up by the BSc students in the department.
5. Increase in research paper publications of faculty members and students in the department.

7) Strengths and weaknesses of each department (3 each)

Strengths

- i. Highly qualified and active-in-research faculty in the department.
- ii. High proportion of students opting for higher education and research.
- iii. Advanced instruments and separate departmental library with more than 1200 books and periodicals

Weakness

- i. Overall drop in number of students opting for life sciences.
- ii. Students from middle academic strata opting for life sciences.

8) Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines)

NIL

9) **DBT grant utilization:**

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

S. No.	Equipment Name (Model no.)	Quantity	Cost (Rs.)	Date of order placed	Purchase/install
1.	Balance	01	59625	03-01-2013	Purchased and installed
2.	Refrigerator (600 L)	01	76500	22-09-2012	
3.	Vertical gel electrophoresis units	05	45951	22-09-2012	
4.	Micropipettes	19	72232	22-09-2012	
5.	Liquid nitrogen	01	24373	22-09-2012	
		Total	278681		

2) **Recurring (details of consumable, material etc.):**

S. No.	Particulars of the material/chemical	Qty	P.O No. and Date of order placed	Bill No. and date	Total Cost (Rs.)
1.	Glass-wares		3350/3-4-2013	1261/30-3-2013	32105
2.	Plastic-wares		3349/3-4-2013	3309/12-3-2013	23178
3.	Chemicals		3331/3-4-2013	1037/23-3-2013	35004
4.	Chemicals		3333/3-4-2013	1068/30-3-2013	9215
5.	Chemicals		3332/3-4-2013	1069/30-3-2013	21533
6.	Chemicals		3334/3-4-2013	1070/30-3-2013	10103
7.	Chemicals		3253/8-2-2013	959/23-2-2013	38680
8.	Chemicals		3255/8-2-2013	945/17-2-2013	25515
				Total	195333

2. DEPARTMENT OF BOTANY

1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Name: Dr. Raval Prachi
 Designation: Associate Professor and Head
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2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

Class	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
2011-12					
FY. B.Sc	40	148	90		Nil
SY .B.Sc		53	87		Nil
TY.B.Sc		07	86		Nil
2012-13					
FY. B.Sc	40				Nil
SY.B.Sc					Nil
TY.B.Sc					Nil

3) **Activities carried out during the year (department wise):**

A) Student activities

- i. **Summer school** -- No
- ii. **Industrial visit** --
 - 1) Visit to Aurvedic –Ras-Shala
 - 2) Visit to Poly-house
- iii. **List of project taken by students**
 - 1) Plant tissue culture
- iv. **Excursions**
 - 1) Visit to Bhimashankar Sanctuary
 - 2) Visit to Sipna Botanical Garden

B) Teachers activity

- i. **Workshop, seminar conducted / attended** --
 F.Y.B.Sc. Syllabus workshop by Dr. S. Goswami

ii. Training course conducted / attended

No

iii. Guest lectures (Please mention Name, Designation, host institute of guest faculty invited)

A lecture for BSc Botany students was delivered by Dr. Anuradha Upadhye, Scientist E1 Agharkar Research Institute, Pune 4.

4) List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:

F.Y.B.Sc.

1. Identification and isolation of plant pathogens
2. Mushroom cultivation

S.Y.B.Sc.

1. Vegetation mapping
2. Photo-documentation of angiosperms
3. Tissue-culture techniques

T.Y.B.Sc.

1. Isolation of DNA from vegetables
2. Tissue-culture techniques
3. Photo-documentation
4. Agarose gel electrophoresis
5. Separation of plant pigments by TLC.

5) Number of students taking project vs. total number of students. Please give list of projects department- wise during the support period.

FYBSc. - 20/100 SYBSc.- 10/50 TYBSc. – 5/10

6) Interdepartmental activities conducted:

- 1) Demonstration of PCR technique at Department of Bio-technology.
- 2) Demonstration and working of Fermenter.
- 3) Use of UV-spectro-photometer at Bio-technology department.
- 4) Use of deep-freeze centrifuge in Microbiology laboratory.

7) Qualitative improvements due to DBT support (please highlight 5 salient lines)

- 1) Infrastructural development of the department
- 2) Conducting of new practicals and more hands-on experience for students.
- 3) Human resource development.
- 4) Enhanced research activities including students' projects in the department.
- 5) Better understanding of theoretical concepts of students through practicals and demonstrations.

8) Strengths and weaknesses of each department (3 each)

Strength:

1. Qualified faculty
2. Well-equipped lab including tissue culture facility.
3. Academic environment in the department.

Weakness:

1. There is scope to further increase the research activities in the department.

2. Number of research projects carried out by the students should be increased.

9) **Problems faced, if any, in implementation of the program and utilization of DBT grant (in two-three lines)**

Nil

10) **DBT grant utilization:**

a. Non-recurring (Equipment):

S.No.	Equipment Name (Model no.)	Quantity	Cost (Rs.)	Date of order placed	Purchase/install
1	Mini Verti.Gel Electrophoresis Unit	1	7,800	12/12/12	7/02/13
2	Fixed type power pack	1	4,500	12/12/12	7/02/13
		Total	13,837		

b. Recurring (details of consumable, material etc.):

S. No.	Particulars of the material/ chemical	Quantity	P.O No. and Date of order placed	Bill No. and date	Total Cost (Rs.)
1	Chemicals		3237, 13/12/12	B1. 1285, 7/02/13	31950
2	Chemicals		3237, 13/12/12	3237, 13/12/12	15750
3.	Chemicals		3252/8-2-2013	946/17-2-2013	47132
				Total	94832

3. DEPARTMENT OF CHEMISTRY

1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Dr. Madhuri Kulkarni
Head, Department of Chemistry
Modern College of Arts, Science and Commerce
Ganeshkhind, Pune
Phone (020) 25634021, 25631091; Mobile: 9890401849
Fax: (020) 25650931
Email: chemistrymodernngk@gmail.com

2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

S. No.	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
1.F.Y.B.Sc	42% (2011-12) 47% (2012-13)	170 147	65% 66%		2-4 2-4
2.S.Y.B.Sc	55% (2011-12) 58% (2012-13)	67 80	70% 70%		1-2 1-2
3.T.Y.B.Sc	55% (2011-2012) 50% (2012-2013)	19 31	68% 75%		0 0

3) **Activities carried out during the year (department wise):**

A) Student activities

v. Summer school

Post graduate students started their projects in summer vacation. Six such projects were completed this year.

vi. Industrial visit

1. 70 students of S.Y.B.Sc visited "Spam control system (Biodiesel Plant) Baramati on 14th July 2012. Students visited the biodiesel plant and saw demonstrations of some instruments used for extraction and analysis of natural products.
2. T.Y.B.Sc and M.Sc students visited Vinati Organics, Lote Parshuram, Chiplun on 4th February 2013.
3. 45 Students of T.Y.B.Sc, M.Sc I and II visited the Science Express, Khadki on 14th September 2012.

vii. List of project taken by students

1. Casein extraction from Soya Sources.
2. Phosphate determination from soft drinks.
3. Biodiesel extraction from groundnut oil.
4. Preparation of nuclear reactor model.

viii. Excursions

1. F.Y.B.Sc students went for a nature trail at Bhimashankar.

B) Teachers activity

Workshop conducted

- Department of Chemistry in collaboration with Student Welfare Board, University of Pune organized NET-SET workshop on 22nd-24th Feb 2013.
- Dr. Sushma Katade worked as coordinator for RIO+20 Nature Awareness India Certification Programme of United Nations Conference on Sustainable Development during the year 12-13.

Workshops attended:

- Dr. Mohini Kute Attended the 81st DAE BRNS-IANCAS, National Workshop on nuclear and radiation Chemistry held during 19-25th November 2012, organized by Department of Chemistry, University of Pune, Pune in collaboration with Indian Association of Nuclear Chemists and Allied Scientists.
- Dr. Sushma Katade participated in one week “National Training Workshop on Biodiversity Conservation for Scientist & Technologists working in Government Sector” 18-22 February, 2013 at Wildlife Institute of India at Dehradun, India.
- Dr. Mohini Kute and Gayatri Shrotriya attended workshop on ‘Health and nutrition’ organized by Indian Women Scientist Association and University of Pune on 8th march 2013

iii. Training course conducted / attended

iv. Guest lectures (Please mention Name, Designation, host institute of guest faculty invited)

1. Prof. Dr. Wolfram Thiemann

Professor

University of Bremen, Germany

8th January 2013

Topic: Renewable energy resources

2. Dr. Rane

Lab India Analytical Instruments Pvt. Ltd.

15th January 2013

Topic: Lecture and demonstration of Brucker made IR Spectrophotometer

4) List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:

1. Column Chromatography to isolate cations.
2. Organic Qualitative Analysis.
3. Landsberger apparatus.
4. To determine Hardness of water.
5. To determine the indicator constant of methyl red indicator.
6. Titration of Cu²⁺ ions with EDTA photometrically.

5) Number of students taking project vs. total number of students. Please give list of projects department-wise during the support period

1. Ten students are given project of pH and conductivity of swimming pool water
2. Ten students are given project, to analyze and confirm potability of water of nearby residential water-tanks.

6) Interdepartmental activities conducted:

1. Science exhibition was held on 11th and 12th January 2013 by faculty of science.
2. The chemistry department won two prizes- first prize was won by the project “Best of waste” Dhanashri Gaware, S.Y.B.Sc and third Prize was won by the project “Preparation of biodiesel from groundnut and soyabean oil” Ganesh Dhumal, Mahesh shinde and Kiran Lokhande, T.Y.B.Sc.
3. Students counseling was done for two students with the help of Psychology department.
4. Science Quiz was conducted by T.Y.B.Sc chemistry for S.Y.B.Sc and F.Y.B.Sc students on 19th January 2013.

7) Qualitative improvements due to DBT support (please highlight 5 salient lines)

1. Overall improvement in infrastructural facilities.
2. Instruments availability.
3. Increased availability of chemicals/ consumables and glassware.
4. Practicals, not included in the syllabus, were conducted.
5. Training for staff and students.

8) Strengths and weaknesses of each department (3 each)

Strengths:

1. Dynamic, highly qualified and efficient staff.
2. Basic instruments and a good library facility is available.
3. Strong and separate placement cell

Weakness:

1. Lower academic record students opting for basic sciences

9) Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines)

-Nil-

10) DBT grant utilization:

a. Non-recurring (Equipment):

S.No.	Equipment Name (Model no.)	Quantity	Cost (Rs.)	Date of order placed	Purchase/ install
1.	Burette stand set	100	49410	20/9/12	Yes
2.	Digital pH meter	02	12600	5/1/13	Yes
3.	Magnetic stirrer	04	15372	5/1/13	Yes
4.	Centrifuge Machine	06	20628	5/1/13	Yes
5.	Digital conductometer	02	12600	5/1/13	Yes
6.	Photoelectric Colorimeter	02	14400	5/1/13	Yes
7.	Digital Potentiometer	02	9000	5/1/13	Yes
8.	Digital Weighing balance	02	15300	5/1/13	Yes
9.	Abbe refractometer	01	17552	5/1/13	Yes
10.	hot air oven Digital temp	01	20160	5/1/13	Yes
11.	Muffle furnace Digital	01	18180	5/1/13	Yes
12.	Water bath	01	11880	5/1/13	Yes
	VAT		20959		
13.	Sodium press machine	01	12375	28/2/13	Yes
	Total		250416		

b. Recurring (details of consumable, material etc.):

S.No.	Particulars of the material/ chemical	Quantity	P. O No. and Date of order placed	Bill No. and date	Total Cost (Rs.)
1.	Glassware		3201/26/11/12	829/29/11/12	44191
			3209/21/12/12	1060/1/2/13	19158
			3309/28/3/13	1021/2/3/13	1800
2.	Plastic ware		3306/22/3/13	3465/28/3/13	18367.9
3.	Chemicals		3262/8/2/13	3449/13/3/13	107555
			3307/22/3/13	311/28/3/13	5503
		Total			

4. DEPARTMENT OF ELECTRONICS

1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Name: Mrs. Vaishali Salunkhe
Designation: Asst. Professor
Department of Biotechnology
Modern College of Arts, Science and Commerce,
Ganeshkhind, Pune
Ph No. -020-25634021/231
Email: sachsal@rediffmail.com

2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

S.No.	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
1.	F.Y.BSc(Gen):40%	2011-12→42 2012-13→38	71.4%	1 st	Nil
2.	S.Y.B.Sc.(gen):40%	2011-12→15 2012-13→19	100% 85%		1%
3.	F.Y.BSc(Comp.Sc.):40%	2011-12→213 2012-13→200	64.38%		Nil
4	S.Y.B.Sc.(Comp.Sc.):40%	2011-12→190 2012-13→200	68.9% 54.33%		Nil

3) **Activities carried out during the year (department wise):**

A) Student activities

i. Summer School

A 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.

Student's response for this game was overwhelming and so enjoyed the Quiz .

ii. Industrial visit

iii. List of project taken by students:

1. Hotel Automation using 8051
2. RFID Based Attendance System
3. Water Level Controller using using 8051
4. Plant Water Controller
5. Hall automation using 8051
6. Temperature Controller using 8051
7. Traffic Light Controller
8. Digital Clock

iv. Excursions

B) Teachers activity

i. Workshop, seminar conducted / attended:

ii. Training course conducted / attended:

One of the staff member of our department has attended 4 days training programme on “Wireless Technology & Security” at Engineering Staff College of India, Hyderabad

iii. Guest lectures (Please mention Name, Designation, host institute of guest faculty invited)

- a. Lecture on “ Android Technology and Applications” By Mr. Promod Gogi , System Manager at Sinerzip Ltd. Pune.
- b. Lecture on “ Introduction to Embedded Systems’ By Mr. Umesh Kumbhalkar, SPJ Systems, Pune.
- c. Lecture on “ Embedded System Applications” By Mr. Shreeniwas Atre, Senior Manager at Wipro Technology, Pune.
- d. Lecture on “ Development of Live projects using Embedded Systems” By Shivam Khole, SPHIER Systems, Bhosari, Pune.

4) List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:

1. Study of Components : F.Y.
2. Antenna Radiation Pattern : S.Y.

3. Mobile Communication(GSM) :S.Y.

5) Number of students taking project vs. total number of students. Please give list of projects department- wise during the support period

Out of 400 students studied in Electronics, 50 students carried out projects. Some of them are listed below.

1. Ms. Snehal Auti
2. Ms. Mugdha Date
3. Ms. Asavari Pasalkar
4. Ms. Narmada Devi
5. Ms. Aboli Babar
6. Ms. Arati Bhosale
7. Ms. Devaki Dhamale.
8. Mr. Pranav Kumar
9. Mr. Shashank Naik
10. Mr. Mayur Patil
11. Sumit Dafal
12. Sushant Chavan

6) Interdepartmental activities conducted:

T.Y.B.Sc. Biotech students developed project on “Effect of FM signals on plant growth” using Antenna Radiation Pattern Study board, sanctioned under DBT-STAR Scheme.

7) Qualitative improvements due to DBT support

1. Improved student involvement. Because of increased number of Experimental Kits.
2. Hands-on experience to the students on different instruments.
3. Purchase of advanced experimental kits benefitted the students.
4. Overall infrastructural and academic improvement of the department.

8) Strengths and weaknesses of each department (3 each)

Strengths

1. Qualified ,Creative, Enthusiastic staff

2. Good team-work properly co-ordinated
3. Well-equipped laboratory with internet facility

Weaknesses:

1. Merit wise below average student input.
2. Lack of industry interaction.
3. Need of research activity to be enhanced further for the students

1) **Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines)**

Nil

2) **DBT grant utilization:**

a. Non-recurring (Equipment):

S.No.	Equipment Name (Model no.)	Quantity	Cost (Rs.)	Date of order placed	Purchase/install
1.	Cathod Ray Oscilloscope	4	82,000.00	26/09/2012	Purchased & Installed
2.	Function Generator	4	38,000.00	26/09/2012	Purchased & Installed
3.	DC Power Supply	4	17,800.00	26/09/2012	Purchased & Installed
4.	Digital Multimeter	10	28,000.00	26/03/12	Purchased & Installed
5.	Antenna (characteristics) Trainer Kit	1	51,500.00	26/03/12	Purchased & Installed
6.	GSM (Global System for Mobile) Phone System	1	68,250.00	26/03/12	Purchased & Installed
Total			2,64,988.00		

b. Recurring (details of consumable, material etc.): Upto 31/03/2013

Sr.No.	Particulars of the material/ chemical	Quantity	P.O No. and Date of order placed	Bill No. and date	Total Cost (Rs.)
1.	Experiment Kits	30	MCASC/P/2012-13/3123	86 & 87 03/09/2012	88,452.00
2.	Experiment Kits	11	MCASC/P/2012-13/3312A & B		1,05,097.00
Total					1,93,549.00

5. DEPARTMENT OF MATHEMATICS

1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Mrs. Swati Kandharkar.

Vice-Principal (Science) &

Head, Department of Mathematics,

Modern College of Arts, Science and Commerce, Ganeshkhind, Pune – 16

Ph. No. 020-25634021(O), 020-24250632(R)

E-mail: swatikandharkar@yahoo.co.in

2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

Class	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
2011-12					
FY. B.Sc	40	66	60		Nil
SY .B.Sc		37	88		Nil
2012-13					
FY. B.Sc	40	55	60		Nil
SY.B.Sc		37	60		Nil
TY.B.Sc		25	90		Nil

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

A) Student activities

i. **Summer school** : Nil

ii. **Industrial visit** : Nil

iii. List of project taken by students

- 1) Ramsey Number.
- 2) Cost of Dam by using Numerical integration.
- 3) Golden Ratio.
- 4) Puzzles

iv. **Excursions** : Nil

B) Teachers activity

i. **Workshop, seminar conducted / attended** : Nil

ii. **Training course conducted / attended** : Nil

iii. **Guest lectures (Please mention Name, Designation, host institute of guest faculty invited)** : Nil

- 3) **List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:**
- C programme
 - Equivalence relation
- 4) **Number of students taking project vs. total number of students. Please give list of projects department- wise during the support period**
- Ramsey Number : (2 out of 25 students taking project)
 - Cost of Dam by using Numerical Integration : (4 out of 25 students taking project)
 - Golden Ratio : (3 out of 25 students taking project)
 - Puzzle : (4 out of 25 students taking project)
- 5) **Interdepartmental activities conducted :**
Contributory teaching in Biotechnology Department
Guidance to Life Science students in their projects.
- 6) **Qualitative improvements due to DBT support (please highlight 5 salient lines)**
- Significant infrastructural improvement in the department
 - Availability of computers have enabled students to take practicals individually
 - Students' number opting for hands-on experience and project increasing gradually.
- 7) **Strengths and weaknesses of each department (3 each)**
Strengths :
 - Separate departmental computer laboratory with necessary software
 - Sincere and dedicated faculty
 - Academic environment in the department
Weakness: 1) Research activities should increase further.
- 8) **Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines)**
Nil

9) **DBT grant utilization:**
a. Non-recurring (Equipment):

S. No.	Equipment Name (Model no.)	Quantity	Cost (Rs.)	Date of order placed	Purchase/install and
1	EPSON LX300 Printer 80Col	02	8095.24 × 2=16190.48 +809.52(5% Vat) =17,000	01/09/2012	Purchased and installed
2	Laptop Acer Make Model 5733	01	23761.90 + 1188.10 (5% Vat) =24,950	01/09/2012	Purchased and installed
3	Desktop Intel Core I3	15	22,761.90 × 15 = 3,41428.50 + 17071.43 (5% Vat) =3,58,500	10/09/2012	Purchased and installed
		Total	4,00,450		

b. Recurring (details of consumable, material etc.):

S. No.	Particulars of the material/ chemical	Quantity	P.O No. and Date of order placed	Bill No. and date	Total Cost (Rs.)
1	AUTOGRAPH Software V.3	1 to 50 users	26/3/2013 MCASC/P/2012-13/3310	SCH2632013/063 26/3/13	38500 + 1925 (5% Vat) =40,425
2	A-4 size paper image copier	20	30/3/13 MCASC/P/2012-13/3328	4105 30/3/2013	158 × 20 =3160
	Box File	20	30/3/13 MCASC/P/2012-13/3328	4105 30/3/2013	68 × 20 =1360
	Ring Binder	10	30/3/13 MCASC/P/2012-13/3328	4105 30/3/2013	62 × 10 = 620
				Total	5140.00
3	a)Canon 303 Toner Cartridge	04	30/3/13 MCASC/P/2012-13/3328A	1307 30/03/2013	3800 × 4 = 15200
	b)Max printer Ribbon	10		1307 30/03/2013	50 × 10 = 500
	c)Max printer Ribbon LX300	10		1307 30/03/2013	90 × 10 = 900
	d) Sony CD-R700MB	50		1307 30/03/2013	12 × 50 = 600
	e)CD cover	50		1307 30/03/2013	2 × 50 = 100
				Total (a+b+c+d+e)	17300 +865 (VAT) =18165.00
				Total	63730

6. DEPARTMENT OF MICROBIOLOGY

1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Mrs. Sneha Ogale,
 Head,
 Dept. of Microbiology,
 Modern College of Arts, Science & Commerce, Ganeshkhind, Pune
Ph. No. 020-25634021 Ext 228; Mobile: 9822046806
Email id: snehaogale@hotmail.com

2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

Sr. No.	Class	Year	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
1.	F.Y. Microbiology	2012-13	41.3	98			Nil
2.	S.Y. Microbiology		47.5	58			Nil
3.	T.Y. Microbiology		39.5	28			Nil
4.	F.Y. Microbiology	2011-12	41.83	105	60		Nil
5.	S.Y. Microbiology			58			Nil
6.	T.Y. Microbiology		50	24	79.16		Nil
7.	M.Sc. I Microbiology	2012-13	Entrance exam was conducted	41			Nil
		2011-12	Entrance exam was conducted	48	95.65		Nil
8.	M.Sc. II Microbiology	2012-13	35.7	43			Nil
		2011-12	39	38	62.2		Nil

3) **Activities carried out during the year (department wise):**

A) Student activities

i. Summer school:

- a. Sixteen TYBSc students underwent training in Diwali vacation at Janakalyan Blood Bank.
 An MOU was signed on 18/9/2012 with Janakalyan Blood Bank for a period of five years for hands on training program to increase employability of students.
- b. Vrinda Makhi was selected for **IASc-INSA-NASI Summer Research Fellowship** at Bose Institute, Kolkata in June-July 2012.

ii. Industrial visit

- To Someshwar Distillery Nira, for SYBSc and TYBSc students.
- To Janakalyan Blood Bank, Pune for TYBSc students on Monday.
- To National AIDS Research Institute, Pune for TYBSc students.
- Kutwal foods Pvt Ltd., Sainagar, Andhalgaon, Tal. Shirur, Pune (URJA foods)
- Maharashtra Medical Foundation- Joshi Hospital, Pune
- Vermiculture plant, Pune
- Soil Microbiology Dept, Agriculture college, Pune

iii. List of projects taken by students: TYBSc students carried out the projects:

- Potability testing of drinking water samples collected from campus
- Epidemiological survey and analysis of data
- Biofertilizer production, application and checking its efficacy
- Microbial enzyme production and purification

iv. Excursions: Visit to ‘Agrovan’, an exhibition by agri-based industries at Agriculture College, Pune by TYBSc students.

B) Teachers activity**i) Workshop, seminar conducted:**

Sr. no.	Title	Duration and Dates	Level
1	Placement Workshop “Right Groundwork For Right Industry” conducted in collaboration with the Board of Student Welfare, University of Pune. Co-ordinators:- Mrs. Vaidehi Dande Mrs. Ashwini Satbhai	14 th and 15 th December 2012	College level (for MSc II and TYBSc. students)

ii) Workshop, seminar attended:

Name of staff member	Title	Details
i) Mrs. Sneha Ogale	National Symposium on “Microbes: Molecular Ecology and Systematics”	Organized jointly by the Microbial Culture Collection (MCC), NCCS and the Association of Microbiologists of India(AMI) Pune Unit , held at YASHADA, Pune on 6 th and 7 th September 2012.
ii) Mrs. Sneha Ogale	National Workshop on “Recent Trends in Applied Statistics: An Interdisciplinary Approach”	Organized by department of Statistics, Fergusson College, Pune & sponsored by University of Pune on 15 th & 16 th March 2013.
iii) Mrs. Vrushali Deshmukh		
iv) Mrs. Vaidehi Dande		

i. **Training course conducted:**

Sr. no.	Title
1	Certificate Course: “Applied Techniques in Industry and Laboratories” . Coordinator: Dr. Mrs. Kavita Parekh, Assistant Coordinators: Mr. Prasad Deshmane & Ms Vrushali Deshmukh

ii. **Guest lectures** (Please mention Name, Designation, host institute of guest faculty invited)

- Dr. Girdhari Lal, Scientist D, NCCS, delivered a lecture on ‘Role of cytokines in autoimmune disorders’ on 6/10/2012.
- Dr. P. K. Dhakephalkar, Scientist, Agharkar Research Institute, delivered a lecture on ‘Molecular Tools for Analysis of Microbial Diversity’.
- **Prof. David Severson, Notre Dame University and Director, Eck Institute for Global Health, USA** delivered a lecture on “Dengue Transmission & Biology of Vector Mosquito *Aedes aegypti*” jointly organized by Microbiology Department, Modern College, Ganeshkhind and **Association of Microbiologists of India (Pune)**.
- **Dr. Leena Yeolekar**, Consultant, Serum Institute of India, Pvt. Ltd., for demonstration of “Egg Inoculation Technique”.
- **Dr R. V. Gadre, Scientist G, NCL, Pune** on ‘Principles of construction & working of HPLC and GC’, for **TY BSc and MSc I** students.

4) **List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:**

- **List of New Practicals:**
 1. Microscopic observation of fungi using Lactophenol Cotton Blue.(FYBSc)
 2. Elevated temperature test for determination of fecal contamination of drinking water. (SYBSc)
 3. Determination of Least Count, Capacity and Range of glass pipettes, micropipettes & balance (TYBSc)
- **Demonstration Practicals**

F. Y. B. Sc.: Swarming growth on nutrient media.

T. Y. B. Sc.:

 - 1) Bacterial DNA isolation and detection.
 - 2) Egg inoculation technique.
 - 3) Serum protein separation by electrophoresis.

5) **Number of students taking project vs. total number of students. Please give list of projects department- wise during the support period**

- **List of projects** taken by students: TYBSc students carried out the following projects:

Sr. No.	CLASS	Name Of The Students	Title of the Project
1	SYBSc	Mohnish Sharma Maliyackal Jinni	Bioremediation Of Chromium VI
2	FYBSc	Sayali Basole, Purva Paradkar, Yogita Gosavi, Prajakta Dhagale	Antibacterial Activity Of Clove Oil
3	FYBSc	Vaibhav Lawand, Hardik Shah Maithilli Hanamghar, Sharvari Sadavati	Isolation Of Coliphages
4	MSc I FYBSc	Pratima Mali, Saurabh Gaikwad, Rashmi Ahire	Pesticide Degraders From Ganga Water (Banaras)
5	SYBSc	Ankita Sarode, Tejas Dhumal, Ashwini Dhumal, Sapna Herole	<i>Azotobacter</i> Bioinoculant Preparation
6	FYBSc	Deepika Shinde, Priyanka Joshi, Rutua Nalge	Isolation Of Fungi
7	FYBSc	Gayatri Wad, Apeksha Darshetkar, Priyanka Shinde	Microbial Pigment
8	SYBSc	Lipi Joshi, Sukomal Kate, Anuja Yadav	Microbial Flora And Role Of Mouthwashes
9	MSc I FYBSc	Jayshree Khadilkar, Manasi Yadav Mamta Sharma	Water Quality Testing From Ganga At Three Points (Gangotri, Haridwar, Kolkata)

LIST OF MODELS

Sr. NO.	CLASS	Name Of The Students	Topic
1	T.Y.BSc	Deepali Ingawale Aarti Walunj, Priyanka Bhosale, Vidyashree Mapare.	Structure of bacterial flagellum.
2.	S.Y.BSc	Sayali Hanamghar, Vedang Ghole, Rutuja Gumaste, Amruta Kulkarni	Microbial Fuel Cell
3.	T.Y.BSc S.Y.BSc	Tabassum Kochikar Shabnum Kochikar	Influenza Virus
4.	S.Y.BSc	Mayuree Sakhare Kashmira Badgujar	Protein synthesis
5.	T.Y.BSc	Sonal Gaikwad, Trupti Jha, Pallavi Veer, Wilson Marandi	Recognition of pathogen associated molecular patterns.
6	M.Sc 2	Vrinda Makhi	pH indicator using purple cabbage

Projects Based on Eco-friendly Innovation

Sr No	Department	Project Title	Class	Name of the students
1	Chemistry	Best Of waste	S.Y.B.Sc.	Dhanashree Gawari
2	Physics	Fruit Clock	F.Y.B.Sc.	Sonali Pawar, Shubhangi Dhumal
3	Electronics	Eco-friendly Society	S.Y.B.Sc.	Gauri More, Sandip Jinde, Prajakta Inarkar, Chinmay More, Prasad Mahamuni, Shubham Wakhre, Omkar Patak
4	Mathematics	Golden Ratio	T.Y.B.Sc	Priyanka Dhumal, Rehana Jamadar, Devyani Kulkarni
5	Statistics	Vehicles in Pune	F.Y.B.Sc.	Renuka patil, Pournima nimbalkar Sneha Magade, Pragati misal
6	Microbiology	Rise of degraders	M.Sc I F.Y.B.Sc	Pratima Mali, Sourabh Gaikwad Rashmi Ahire
7	Botany	Phytoremediation	T.Y.B.Sc	Sonali Jadhav, Supriya Wavhal Jyoti Bevnale
8	Zoology	Paper Recycling	T.Y.B.Sc	Abhijeet Lande, Akash Pardesi Nilesh Kasbe
9	Biotechnology	Anatomy of urinary tract system	T.Y.B.Sc (Biotech)	Sagar Arya, Poonam Sashidhar
10	Computer Science	e- waste	S.Y.B.Sc.	Trupti Deshpande, Priyanka Pawar
		Green Computing	S.Y.B.Sc.	Pravin Patil

6) Interdepartmental activities conducted:

- 1) Inauguration of Science association activities followed by Guest Lecture by Dr. Pandit Vidyasagar, Professor, Department of Physics, University of Pune on 'Life In Space' for science departments.
- 2) Screening of the Movie 'Beautiful People' (a movie on Wild-life) for life science departments.
- 3) Mrs. Sneha Ogale conducted the practical: Antibiotic sensitivity testing for TYBSc Zoology students.
- 4) Project with Biotechnology department students.

7) Qualitative improvements due to DBT support (please highlight 5 salient lines)

1. Overall development of department through improved infrastructural facilities created under the program.
2. Introduction of new practicals & resource material and exposure of students to new techniques
3. Hands – on training of students for use of some instruments
4. Individual access to instruments & materials where they were doing the practicals earlier in groups.
5. Exposure to experimental design and execution of projects, hence development of scientific aptitude.

8) Strengths and weaknesses of each department (3 each)

Strengths:

1. Qualified & enthusiastic staff members
2. Well-equipped laboratories

3. Linkages with research & academic institutes

Weaknesses:

1. Space constraints
2. Scope for improvement in involvement of UG students in research.
3. Requirement for more copies of reference books for UG students.

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

Nil

10) DBT grant utilization:

a. Non-recurring (Equipment):

S. No.	Equipment Name (Model no.)	Quantity	Total Cost (Rs.)	P.O. No.; Date of order placed	Purchase/install
	Instruments				
1	Mini Electrophoresis unit and power pack; Leveling Table	1+1+1	10907	3246; 24-1-13	Purchased and installed
2	Electronic digital Balance & Digital pH meter	1; 1	34965	3225; 21-1-13	
3	Binocular Microscope Olympus make	2	48825	3245; 24-1-13	
4	Orbital Shaker Incubator DBK Make	1	58410	3267; 15-2-13	
5	Digital colorimeter CL-157 Elico make	2	22871	3226; 21-1-13	
7	Borosil Miniature Micropipettes (capacity 5, 10, 100, 200, 500, 1000 µl)	1, 1,6, 2, 2, 10	5756	3326; 30-3-13	
		Total	1,81,734		

b. Recurring (details of consumable, material etc.):

S. No.	Particulars of the material/ chemical	Quantity	P.O No. and Date of order placed	Bill No. and date	Total Cost (Rs.)
Glass ware					
1	Quartz cuvettes 1ml	1 pair	3327, Dt.30-3-13	1078,30-3-13	5000
2	Glassware		3299, Dt.22-3-13	1257,30-3-13	28,819
			3299; Dt.22-3-13		
			3299; Dt.22-3-13		
			3300; Dt.22-3-13	1258,30-3-13	12,953
			3298; Dt.22-3-13	1043/12, 26-3-13	4,289
			3324; Dt.30-3-13	1259,30-3-13	11,529
			3234, 22-1-13	1050, 26-3-13	12008
Total					74598
Chemicals					
1	Chemicals and reagents		3319 Dt.30-3-13	1100/12, 30-3-13	17,168
			3319 Dt.30-3-13	1099/12; 30-3-13	4213
			3319 Dt.30-3-13	1109/12, 30-3-13	536
			3317 Dt 30-3-13	244/12,30-3-13	95
			3317 Dt 30-3-13	313/12, 30-3-13	2640
			3318 Dt 30-3-13	314/12,30-3-13	2,604
			3320 Dt .30-3-13	1076,30-3-13	9,764
			3321 Dt. 30-3-13	1077,30-3-13	1654
Total					38,674
Miscellaneous and Plastic Ware					
1	Miscellaneous		3286 Dt 5-3-13	3227A/12, 6-3-13	11,171
			3287 Dt 5-3-13	3222/12, 6-3-13	10,893
2	Plastic/Glassware		3288,Dt5-3-13&	3336/12, 16-3-13	15,835
			3289 Dt 5-3-13	3228A/12, 6-3-13	4,731
			3290 Dt 5-3-13	3412/12, 22-3-13	10,079
3	Plastic-ware		3322 Dt 30-3-13	3490/12, 30-3-13	2726
			3323 Dt 30-3-13	3491/12, 30-3-13	6,476
			3325 Dt 30-3-13	1075,30-3-13	2,700
			3297 Dt 22-3-13	1256,30-3-13	7,390
			3296 Dt 22-3-13	1042/12, 26-3-13	10,483
				TOTAL	82,484/-
Total Recurring					195756

7. DEPARTMENT OF PHYSICS

1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Mrs. Varsha Joshi
 Head,
 Department of Physics
 Modern College of Arts, Science and Commerce,
 Ganeshkhind, Pune
Ph No. -020-25634021/231
Email: varsha.joshi@moderncollegegk.org

2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

.	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
2011-12					
FY. B.Sc	40				Nil
SY .B.Sc		41	100		Nil
TY. B.Sc		07	100		Nil
2012-13					
FY. B.Sc	40	62	100		Nil
SY. B.Sc		38	100		Nil
TY. B.Sc		11	82		Nil

3) **Activities carried out during the year (department wise):**

A) Student activities

- i. Summer school
- ii. Industrial visit
- iii. List of project taken by students
- iv. Excursions
 - a. FYBSc – Vidnyan Ashram, Pabal
 - b. SY and TYBSc – Energy Park, Kanhe Phate, Mumbai-Pune Road and pavana dam
 - c. TYBSc- Jaikwadi Dam, Ajantha, Verul, and Paithan – Laser Shows

B) Teachers activity

- i. Workshop, seminar conducted / attended
 1. One faculty member (Mr. M. D. Waghmare) attended Refresher Course in Experimental Physics at Vidya Pratisthan College, Baramati
 2. Faculty members (Mrs. Varsha Joshi and Ms. Chhaya Abnave) attended National Seminar on ‘Higgs Boson’ at Abeda Inamdar College, Pune

ii. Training course conducted / attended

iii. Guest lectures (Please mention Name, Designation, host institute of guest faculty invited)

Dr. Sanjay Dhole, Reader, Department of Physics, University of Pune delivered a lecture on *Use of Nuclear Radiation for Society*

4) List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:

1. Determination of magnetic field using Hall Probe
2. Measurement of velocity of sound by Phase shift method
3. Surface tension by Fergusson's method
4. Gain of OPAMP in inverting and non-inverting mode
5. Logarithmic decrement using Laser source

5) Number of students taking project vs. total number of students. Please give list of projects department-wise during the support period

All (100%) students work on different projects. All students of T.Y.B.Sc class work on different projects. Students are encouraged to study different topics in physics concepts for project through posters, rangoli, puzzle and quiz.

1. Comparative study of different sources of light
2. To study of different types of crystal structure
3. Diagnostic Audiometer
4. Effect of RF transmitter on the growth of plants
5. Effect of FM transmitter on the growth of plants.
6. Physics in sports and Human activity.
7. Cylindrical parabolic collector
8. Calorific value of different wooden material.
9. Bicycle power Generator
10. Estimation of chlorophyll a and b by spectrometric method

6) Interdepartmental activities conducted:

TYBSc projects in collaboration with Departments of Electronics, Botany, Biotechnology and Sports.

7) Qualitative improvements due to DBT support (please highlight 5 salient lines)

- a. Students got opportunity to handle the new instruments
- b. Students could perform some practicals which were not in the syllabus.
- c. Overall infrastructural improvement of the department.
- d. Human resource development through training and hands-on-experience

8) Strengths and weaknesses of each department (3 each)

Strengths:

1. Well-equipped laboratories
2. Enthusiastic staff.
3. Good team work and coordination

Weakness:

1. Scope for further development in research

9) Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines)

Nil

10) **DBT grant utilization:**
a. Non-recurring (Equipment):

S. No.	Equipment Name (Model no.)	Qty	Cost (Rs.)	Date of order placed	Purchase/ install
1.	Digital storage oscilloscope (D36100CA)	1	65488.5	23/10/12	Purchased and installed
2.	CRO 20MHz dual channel function generator MSG2M	1	19372.5		
3.	Function Gennator	2	17955		
4.	OPAMP inverting and non inverting kit	1	1721.25		
5.	Coulombs law demonstration (NV 6012)	1	7819.6	08/2/13	Purchased and installed
6.	Hysteresis loop tracer (NV 6108)	1	27572		
7.	Planck's constant (NV6025)	1	9401		
8.	Quinke's tube	1	4068		
9.	DC power supply digital	2	9011.25		
10.	Optical fiber communication 2502 tech book	1	25764		
11.	Audiometer Gi9a3	1	49250		
Total			2,37,423		

b. Recurring (details of consumable, material etc.):

S. No.	Particulars of the material/ chemical	Qty	P.O. Number and Date of order placed	Bill No. and date	Total Cost (Rs.)
1.	Zener stabilized power supply	1	MCASC /2012- 13/P/33 11, 26/3/13	35/12-13, 28/3/2013	3000.00
2.	OPAMP adder & subtractor	2		35/12-13, 28/3/2013	7000.00
3.	Opamp as integrator & differactor	2		35/12-13, 28/3/2013	7000.00
4.	Study of I-V chara. UJT	1		35/12-13, 28/3/2013	3000.00
6.	Temperature measurement by PT100	1		35/12-13, 28/3/2013	5500.00
7.	Opamp inverting & non inverting kit	1		35/12-13, 28/3/2013	7000.00
	Discounts and VAT				
8.	Crystal structures	16	28/3/13		4500.00
Total					37,406.00

8. DEPARTMENT OF STATISTICS

1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Dr. Amita Dharmadhikari
 Associate Professor and Head
 Department of Statistics
 Modern College of Arts, Science and Commerce,
 Ganeshkhind, Pune
Ph. No. -020-25634021
Email: amitadharma@gmail.com

2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

Class	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
2011-12					
FY. B.Sc	40	66	60		Nil
SY .B.Sc		30	80		Nil
2012-13					
FY. B.Sc	40	67	60		Nil
SY.B.Sc		30	60		Nil

3) **Activities carried out during the year (department wise):**

A) Student activities

- i. Summer school
- ii. Industrial visit
- iii. List of project taken by students
- iv. Excursions

B) Teachers activity

- i. Workshop, seminar conducted / attended
- ii. Training course conducted / attended
- iii. Guest lectures (Please mention Name, Designation, host institute of guest faculty invited)

4) **List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:**

1. Programming skill development of students using R software programs.

2. Collection and analyses of data by students using R software.

- 5) **Number of students taking project vs. total number of students. Please give list of projects department- wise during the support period**

No.	Name of the students	Title of the project/Model
1	Shahed Shaikh	A statistical report on the game of Scoor
	Shashank Tiwari	
	Tushar Mazire	
	Prachi Kadam	
2	Varalakshmi Pathipati	Indian currency V/s euro dollar
	Madhura Deshpande	
	Mugdha Date	
	Mayur Lohakare	
3	Devaki Dhamale	Demography of India
	Snehal Deo	
	Sachita Pandit	
	Payal Jadhav	
4	Rita Pawar	Analysis of suicide rate in Pune city
	Mahendra Waykos	
	R.K.Narmada	
	Snehal Auti	
5	Chaitali Makashir	Analysis of road accidents in Pune city
	Ruksar Sayyad	
	Deepali Bhote	
	Mohini Chandere	
6	Namrata Wadatkar	Analysis of no. of idea sim card users in Pune city
	Dhananjay Gopale	
	Rajkumar Bhati	
	Aarti Thakur	

- 6) **Interdepartmental activities conducted:**
 Contributory teaching in Biotechnology Department
 Guidance to Life Science students in their projects.
- 7) **Qualitative improvements due to DBT support (please highlight 5 salient lines)**
- 8) **Strengths and weaknesses of each department (3 each)**
- 9) **Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines)**
- 10) **DBT grant utilization:**
 a. **Non-recurring (Equipment):**
 b. **Recurring (details of consumable, material etc.):**

9. DEPARTMENT OF ZOOLOGY

1) **Name of Departmental Coordinator, designation, address, phone & fax nos., email:**

Mrs. Sangita Sontakke
 Asst. Professor
 Department of Zoology
 Modern College of Arts, Science and Commerce,
 Ganeshkhind, Pune
Ph No. -020-25634021/231; Mob. 9657140152
Email: neelsontakke@gmail.com

2) **Admission in different courses in participating departments in 2011-12 & 2012-13 academic sessions:**

S.No.	Cut off % for admission	No. of students admitted	% of result	Position in university	No. of drop out students
1.	40	(2011-12) – F.Y. - 107	83.43%	-----	Nil
2.	-----	(2011-12) – S.Y. - 73	95%	-----	Nil
3.	-----	(2011-12) – T.Y. - 17	96.87%	-----	Nil
4.	40	(2012-13) – F.Y. - 107		-----	Nil
5.	-----	(2012-13) – S.Y. - 83			02
6.	-----	(2012-13) – T.Y. - 14	64.28%		Nil

3) **Activities carried out during the year (department wise):**

A) Student activities

i. Summer school:

ii. Industrial visit:

1. Visit to NARI, Pune;
2. Pathological museum, B. J. Medical College, Pune,
3. NIO, Goa
4. National Science Centre, Goa,
5. Central Bee Research and Training Institute, Pune,
6. Fishery Farm, Pune
7. Sericulture Unit, Pune

iii. List of project taken by students –

1. Study of Physico-chemical properties of water in and around Pune
2. Study of fish diversity in water bodies in and around Pune
3. Study of effects of some pharmaceutical formulations on mitosis in onion root tips
4. Model making and poster presentation in intra-collegiate and inter-collegiate competitions

iv. Excursions –

1. Visit to sea shores – Vengurla, Malvan, Sindhudurg fort, Kunkeshwar beach in Konkan, Maharashtra
2. Visit to Bhimashankar to study Biodiversity

B) Teachers activity

iv. Workshop, seminar conducted / attended –

Prf. Sangita Sontakke attended a workshop on F.Y.B.Sc. Syllabus restructuring in Zoology

v. Training course conducted / attended –

Prof. Sangita Sontakke co-ordinated a “Crash Course in Advanced Biological Techniques” for S.Y. and T.Y. B.Sc. Zoology students

vi. Guest lectures (Please mention Name, Designation, host institute of guest faculty invited) -

4) List of New Practicals/demonstrations introduced for UG students of each batch (Ist, IInd and IIIrd year) in different departments supported under Star College Scheme in last one year:

1. Demonstration Practicals –

- (i) E-learning material in the form of a VCD entitled “Innovative teaching of Dissection Part I”
- (ii) In vitro culture of Chick Embryo – for S.Y.B.Sc.
- (iii) Fish Karyotyping – for T.Y.B.Sc.

2. Experiments carried out by students –

- (i) Total count of WBC – S. Y. B.Sc.
- (ii) Insect Karyotyping – T.Y.B.Sc.
- (iii) Immunodiffusion techniques – S.Y.B.Sc. and T.Y.B.Sc.
- (iv) Buffer Preparations –S.Y.B.Sc.

5) Number of students taking project vs. total number of students. Please give list of projects department- wise during the support period

1. Study of Physico-chemical properties of water in and around Pune – 3 students
2. Study of fish diversity in water bodies in and around Pune – 3 students
3. Study of effects of some pharmaceutical formulations on mitosis in onion root tips – 3 students
4. Model making and poster presentation in intra-collegiate and inter-collegiate competitions – 31 students

Total no. of students taking the projects – 40 students

Total no. of students – 204

6) Interdepartmental activities conducted:

- (i) With Microbiology department – T.Y. B.Sc. Zoology students performed 3 practicals viz. Culture of bacteria in liquid medium, Culture of bacteria on agar and Antibiotic Sensitivity of bacteria
- (ii) With Biotechnology department – T.Y. B.Sc. Zoology students performed the practical of Establishment of primary cell culture
- (iii) T.Y. B.Sc. Biotechnology students performed their yearly project in the Department of Zoology
- (iv) M.Sc. Biotechnology students carried out the identification of fishes in the Department of Zoology
- (v) Guidance regarding the permanent slides preparation was given to T.Y. B.Sc. Biotechnology students

7) Qualitative improvements due to DBT support (please highlight 5 salient lines)

1. Over-all infrastructural improvement of the department through DBT grants.
2. 6 new experiments and demonstration practicals were conducted in the department which imparted more knowledge to the students in comparison with the curriculum.
3. Research papers publication with authorship for BSc students: Dr. S.S. Kharat, Prof. B.V. Patil and Prof. S.C. Supekar published research papers (Total no. of published papers – 5).
4. Interdepartmental research activities enhanced as 10 students from the department and other departments participated in the research work that was carried out in the department.
5. There is development of students' interest in the subject and the allied research.

8) Strengths and weaknesses of each department (3 each)

Strengths

1. Qualified and Competent teaching staff
2. Participation of students in various departmental activities
3. Environment suitable for extension and research activities

Weaknesses

1. Limited infrastructure
2. Overall drop in number of students opting for life sciences.
3. Number of projects undertaken by the students should be increased.

9) Problems faced, if any, in implementation of the programme and utilization of DBT grant (in two-three lines)

Nil

10) **DBT grant utilization:**
a. Non-recurring (Equipment):

S. No.	Equipment Name (Model no.)	Qty	Cost in Rs.	Date of order placed	Purchase/install
1.	Mini vertical gel electrophoresis – VEP 170301	01	7800	23.12.12.	Purchased
2.	Midi vertical gel electrophoresis – VEP 170302	01	8900	23.12.12.	Purchased
3.	Variable power pack – BE/VPP/1212	01	29500	23.12.12.	Purchased
4.	Magnetic Stirrer – 1 MLH REMI	02	10350	27.12.12.	Purchased
5.	Digital pH meter – EQ 610	01	6000	27.12.12.	Purchased
6.	Haemocytometer – ROHEM	10	9000	27.12.12.	Purchased
7.	B.P. Apparatus – BPMR – 112	05	8575	29.12.12	Purchased
8.	Eon-pipette – VV0005	01	3999	23.12.12.	Purchased
9.	Eon-pipette – VV0010	01	3999	23.12.12.	Purchased
10.	Eon-pipette – VV0020	01	3999	23.12.12.	Purchased
11.	Eon-pipette – VV0100	01	3999	23.12.12.	Purchased
	Total (including VAT)		Rs. 1,07,493/-		

b. Recurring (details of consumable, material etc.):

S. No.	Particulars of the material/chemical	Qty	P.O No. and Date of order placed	Bill No. and date	Total Cost (Rs.)
1	Lab chemicals	37	27.11.12	843/15.12.12	22350/-
2	Restriction digestion Kit 120920 (5 expts)	01	27.11.12	843/15.12.12	3800/-
3	Restriction digestion Kit 120920 (5 expts)	01	23.12.12	1255/25.12.12	7800/-
4	DNA extraction kit 120912	01	27.11.12	843/15.12.12	5200/-
5	DNA extraction kit 120912	01	23.12.12	1255/25.12.12	3000/-
6	DNA extraction kit 120913	01	27.11.12	843/15.12.12	3900/-
7	DNA extraction kit 120913	01	23.12.12	1255/25.12.12	3900/-
8	Water testing master kit	01	27.11.12	843/15.12.12	5500/-
	Total (including VAT)				61,970/-

Minutes of the Advisory Committee Meeting

OFF SEAR	PAGE No.
STAG	DATE

⑨ Minutes of the meeting held on 16/03/2013

Time :- 12:00 noon
Venue :- IQAC Room

A meeting was held on 16/03/2013 Saturday at 12:00 noon in IQAC room to discuss the progress made in term of purchase and planning of further activities.

Following staff members were present for the meeting.

- 1) Dr. Sanjay Kharat -
- 2) Dr. Shrinchanikar -
- 3) Dr. Kodam K.M.
- 4) Mrs. Swabi Kandharakar - Mandharkar
- 5) Mrs. Sneha Ogale - Sneha Ogale (Microbiology)
- 6) Mrs. Sonia S. Joshi - Soniya S. (Statistics)
- 7) Mrs. Saugata Santakke - Santakke (Zoology)
- 8) Mrs. Varsha Joshi - Joshi (Physics, Electronics)
- 9) Dr. Prachi Raval - Raval (Botany)
- 10) Dr. Rakhee Gupta - Gupta (Biotech)
- 11) Dr. Vinay Kumar - Vijay (Coordinator)
- 12) Dr. Madhuri S. Kulkarni - Kulkarni (Chemistry)

Minutes of the meeting:

- 1) Revised formulation of advisory committee.
- 2) Review of Purchases done under the programme.

- 3) Reviewing the progress done so far.
- 4) Suggestions from the external experts for conducting the programme under this activity including participation of students in trainings and summer schools and faculty members in workshops, conferences and Human Resource development programme.
- 5) Maintenance of records of activities such as practicals and demonstrations for students under the programme.
- 6) Suggestions from external experts regarding popular lecture series to attract more students towards basic sciences.
- 7) Expert also suggested names of many laboratories and scientists for training for students and teachers.

[Signature]
(Principal)

[Signature]
(Vice principal)



[Signature]
(Coordinator)

Revised Advisory Committee for DBT Star College Scheme at Modern College, Ganeshkhind, Pune



Progressive Education Society's

Modern College of Arts, Science & Commerce

Ganeshkhind, Pune 411016.

Re-Accredited by NAAC with 'A' grade

Dr. Sanjay S. Kharat
M.Sc., L.L.B., M.B.A., Ph.D.
Principal

- Affiliated to University of Pune: PUN / PN / ASC/ 089 (1992)
- UGC - Recognition No.: F-8-290 /2006(CPP-I)
- Best College Award by University of Pune - 2013
- DST-FIST sponsored college
- STAR College Scheme sponsored by DBT.

Tel.: 020 25634021, 25631091
Fax: 020 25650931
e-Mail: info@moderncollegegk.org
Website: www.moderncollegegk.org

M(ASC) 2012-13/ 1493

Dt. 14/02/2013

To
Dr. Padma Singh
Coordinator, Star College Scheme
Scientist,
DBT, New Delhi

Sub.: Regarding Restructured *Advisory Committee of the DBT Star College Scheme* implemented at PES's Modern College of Arts, Science and Commerce, Ganeshkhind, Pune

Respected madam,

As per the directives from Mr. Sanjeev Srivastava about reconstruction of advisory committee at the college, we have restructured the *Advisory Committee* for effective implementation of the scheme at our college. We are furnishing herewith the details of the committee, for your kind perusal and further necessary action in this regard.

The revised composition of *Advisory Committee for DBT Star College Scheme* implemented at Modern College, Ganeshkhind, Pune – 411 053

- | | | |
|---|--------------------|----------|
| 1. Dr. Sanjay Kharat | Principal | Chairman |
| 2. DBT Representative | (Technical Expert) | Member |
| 3. DBT Representative | (Financial Expert) | Member |
| 4. Dr. G. S. Chinchankar
Prof. of Botany (Retd.)
Coordinator, SET Exam
University of Pune,
Pune – 411 007 | External Expert | Member |



Progressive Education Society's

Modern College of Arts, Science & Commerce

Ganeshkhind, Pune 411016.

Re-Accredited by NAAC with 'A' grade

Dr. Sanjay S. Kharat
M.Sc., L.L.B., M.B.A., Ph.D.
Principal

- ◆ Affiliated to University of Pune: PUN / PN / ASC/ 089 (1992)
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
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5. Dr. K. M. Kodam External Expert Member
Associate Professor,
Department of Chemistry
University of Pune,
Pune – 411 007

6. Dr. Vinay Kumar Course Coordinator Member Secretary

7. Departmental Coordinators:

- | | | |
|-------------------------|--------------------------|--------------------------|
| 1. Mrs. S. Kandharkar | Departmental Coordinator | Mathematics Department |
| 2. Dr. Prachi Rawal | Departmental Coordinator | Botany Department |
| 3. Mrs. S. Sontakke | 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. Varsha Bapat | Departmental Coordinator | Electronics Department |
| 9. Mrs. R. M. Umarani | Departmental Coordinator | Statistics Department |


(Dr. Sanjay Kharat)
Principal

Principal
Modern College of Arts, Science
& Commerce, Ganeshkhind, Pune-5.

