



॥ सिद्धिर्नेकान्तात् ॥

Estd-June 1962

Anekant Education Society's

TULJARAM CHATURCHAND COLLEGE of Arts, Science and Commerce, Baramati, 413102

Dr. Chandrashekhar V. Murumkar

PRINCIPAL

M.Sc., Ph.D.

☎ : (02112) 222405, 223635 Fax : (02112) 222728

E-mail :- principal.tccollege@gmail.com

Website : www.tccollege.org

Religious Minority Institute

NAAC REACCREDITED 'A+', CGPA 3.55

• Best College Award - SPPU 2017

• UGC - CPE Status

• DBT - Star College Scheme

• ISO - Certified - 9001 - 2008

• Best Principal Award - SPPU 2017

• UGC - B. Voc. Programme

• DST FIST 'O' Level

• UGC - COC

Affiliated to Savitribai Phule Pune University (Formerly University of Pune) (Id No.PU/PN/ASC/016/1962) Univ. College Code No. 032, HSC Board Code No.J 11.02.001(1976-77)

Ref. No. AES/TCC/ *GBB* 31

Date *1* APR 2017

To,
Dr. Garima Gupta,
Scientist D,
Department of Biotechnology,
New Delhi

Sub. : Submission of progress report for STAR College Scheme (2016-17)

Ref. : Your email dated 06/04/2017

Respected Dr. Gupta,

Thank you for your e-mail. We are sending, herewith, the copy of the Annual progress report for the STAR college scheme granted to our college for the academic year 2016-17. The scheme is sanctioned to four departments of our institute viz. Microbiology, Botany, Zoology and Physics which consequently resulted in increase in the quality of education and infrastructure.

Hope you will find the progress report in order.

Thanking you with regards,

Yours faithfully,

(Dr. S. J. Sathe)
Coordinator,
DBT-STAR College Scheme

ANNUAL PROGRESS REPORT (2016-17) OF DBT-STAR COLLEGE SCHEME

Annexure I

1. **Name of the College** : Tuljaram Chaturchand College
of Arts, Science and Commerce, Baramati
2. **Status (Govt./ Govt. Aided/ Autonomous/Pvt):** Govt. Aided
3. **Women's College or Co-educational** : Co-educational
4. **Urban/Rural** : Rural
5. **No. of departments supported** : 04
6. **NAAC Ranking + Year** :A+ (CGPA-3.55), 2017
7. **Details of extramural funding received in the last 3 years (UGC, DBT, DST; duration, period and amount) :**

Funding Received for the period 2014-15 to 2016-17

Sr.No.	Agency	2014-15	2015-16	2016-17	Total
1	DBT				
	DBT Star	-	20,00,000	9,00,000	29,00,000
	DBT (Prof.S.T. Pawar)	-	3,34,966		3,34,966
2	DST – FIST	39,50,000	-	17,80,980	57,30,980
	DST-SERB	3,00,000	6,00,000		9,00,000
3	UGC				
	G.D.A.	4,80,000			4,80,000
	IQAC	3,00,000			3,00,000
	MRP (Prof.N.K.Dhane)	2,90,000			2,90,000
	Substitute Teacher	14,45,024	54,81,565		69,26,589
	Teacher Fellowship	30,000	75,000		1,05,000
	11 th Plan	-	1,93,610		1,93,610
	C.O.C.	-		21,59,550	21,59,550
	B.Voc.	65,00,000		18,70,820	83,70,820
	CPE	-		1,02,00,000	1,02,00,000
	MRP (Prof.S.T.Pawar)	-		4,26,007	4,26,007
TOTAL					2,94,51,576

QUANTITATIVE

(Data to be provided in the figures as well as bar graphs, before and after the Star College Scheme was implemented in the college)

8. No. of applicants vs. No. of seats in each department:

		Microbiology	Botany	Zoology	Physics
F. Y. B. Sc.	No. of Applicants	400	500	407	275
	No. of Seats (Admission)	218	248	185	212
S. Y. B. Sc.	No. of Applicants	51	145	154	160
	No. of Seats (Admission)	51	145	154	146
T. Y. B. Sc.	No. of Applicants	31	24	41	63
	No. of Seats (Admission)	31	22	41	53

9. Number of students admitted year wise in different courses supported under the Star College Scheme:

Class	Number of students admitted			
	Microbiology	Botany	Zoology	Physics
F. Y. B. Sc.	30	22	30	27
S. Y. B. Sc.	49	26	27	22
T. Y. B. Sc.	31	16	22	23

10. Change in the cut off percentage/admission: N.A. [First Year]

11. Change in the dropout rate: N.A. [First Year]

12. Data on pass percentage (UG level): N.A. [First Year]

13. Data on how many students opted for PG courses : N.A. [First Year]

14. List of additional practicals introduced

Microbiology :

1. Good laboratory Practices.
2. Wrapping of Glasswares and Plugging of Flasks and Tubes.
3. Adjustment of pH meter using pH meter.
4. Handling of Micropipetts.
5. Preparation of Slants and Butts.
6. Preparation of Molar/Normal/%solution.
7. Preparation of SOP for UV Spectrophotometer.

8. Preparation of SOP for operation of Cooling Centrifuge.
9. Preparation of Manuscript using Microsoft Word and Microsoft Exel.
10. Calibration of pH meter.
11. Fumigation of Lab.
12. Handling of Laminar Air Flow.

Botany :

1. Vermiculture technique.
2. Use of biofertilizers in crop field.
3. Phytoremediation of saline soil.
4. Practical's based on nursery management preparation of beds and raising seedlings.
5. Techniques of seed scarification.
6. Seed testing for viability and vigor.
7. Practical's based on nursery management- cultivation techniques.
8. Practical's based on nursery management
9. Raising of different types of green and poly house.

Zoology :

1. Culturing of Earthworm
2. To estimate the Morphometric measurements in fishes.
3. Handling of microscopes.
4. Preparation of buffer of desired pH and molarity.
5. Preparation of normal, molar and percent solution.
6. Study of heart beat in cockroach.
7. Analysis of Sugars by TLC.
8. Sectioning and staining and mounting from animal tissues.
9. Population dynamics of insects with Quadrate method.
10. Chick embryo culture on glass ring.
11. Study of fecundity in fishes.
12. Effect of acetylcholine & adrenaline on fish chromatophores.

Physics :

F.Y B.Sc

1. Young's Modulus of Metal Bar by flexural vibration method
2. Rigidity modulus of brass
3. Study and use of digital vernier, micrometer screw gauge, CRO etc.

S.Y. B.Sc

4. Calibration of Si diode as thermometer
5. Energy band gap of semiconductor
6. Measurement of capacitance
7. Characteristics of solar cell

T.Y. B.Sc

8. Measurement of electrical and thermal conductivity of copper
9. Study of AC bridges
10. Dielectric constant of non-polar liquid and dipole moment of organic liquid
11. B-H curve of ferromagnetic materials
12. Measurement of self inductance of coil
13. Determination of wavelength of given source

15. List of minor projects implemented name of students and supervisor

Microbiology

Sr. No.	Name of the Project	Name of Students	Name of Guide
1.	Isolation and purification of bacteriophage of <i>Xanthomonas axonopodis</i> .	1. Kajal Gaikawad 2. Sayali Doshi 3. Monika Shejal 4. Bhakti Swami 5. Sayali Shinde 6. Kalyani Sonawane	Dr. M. H. Gajbhiye
2.	Isolation and characterization of amylase producing bacteria from soil	1. Nisha Bajaj 2. Santosh Gulumkar 3. Geetanjali Pansare 4. Mayur Pawar 5. Happiza Mallick 6. Komal Jagtap	Mrs. Y. R. Mulay
3.	Isolation and identification of normal flora present in acne	1. Gayatri Bhavsar 2. Kanchan Mengade 3. Geetanjali Karve 4. Pranali Nale 5. Pravin More 6. Neha Khandale	Mr. D. V. Doshi
4.	Analysis of water sample	1. Vidhya Nale 2. Vaishali Londhe 3. Richa Jarande 4. Shraddha Shinde 5. Onkar Khaire 6. Jayvardhan Bagade	Mrs. K. R. Jagtap
6	Isolation and characterization of probiotic bacteria from milk and yogurt sample	1. Mayur Bankar 2. Pooja Dhapte 3. Kajal Bhosale 4. Sajid Mujawar 5. Shivani Dombale 6. Jyoti Kulthe	Mrs. S. R. Shaikh
7	Isolation and identification of nitrogen fixation bacteria from soil sample	1. Sudeshna mandlik 2. Rutuja Bedake 3. Shubham Shitole. 4. Shrutika Mhetre 5. Rupali Sirsat 6. Ankita Chavan	Miss. S. P. Owl
8	Isolation and characterization of lactic acid bacteria in dairy product (milk and yogurt)	1. Yogesh Yele 2. Mayur Rupnawar 3. Anjali Chande 4. Shweta Kharade 5. Pratiksha Salunkhe 6. Aishwarya Patil	Mrs. P. C. Bhosale
9	Isolation and characterization of amylase producing bacteria from soil	1. Prashant rupnawar 2. Priya Pande 3. Shrutika Mane 4. Rohini Gawali	Miss. S. S. Shah

		5. Vrushali Gawade 6. Snehal Kale 7. Ganesh Karanjkar	
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Botany :

Sr. No.	Name of the Project	Name of Students	Name of Guide
1.	Survey and collection of seasonal plants from different areas	More Rupali Bapu Wagh Priyanka Bhausaheb	Dr. (Mrs.) R. D. Chitale
2.	Phytoremediation of saline soil by using salt tolerant plant species	Taware Rohit Dadaso Bankar Suraj Bhivaji Mohite Digvijay Prataprao	Dr. B. S. Mali
3.	Estimation of bioactive compounds from different plant sources	Lalage Vidya Satish Zende Kshitija Vikash Khomane Komal Sunil Kadam Supriya Nandraj	Dr. (Mrs.) M. P. Patil
4.	Effect of vehicular pollution on growth and development of roadside plants	Nale Shital Shankar Gawade Urmila Somnath More Kajal Laxman Shinde Shital Jyotiram	Dr. A. B. Telave
5.	Isolation, Identification and characterization fungi from crop field	Khomane Ranjeet R. More Aakash Abaji Gadhane Rahul Rajendra Sutar Vishal Jalindar	Dr. M. B. Kanade
6.	Antimicrobial assessment of bryophytes from ghat regions	Surve Usha Jalindar Gophane Pratiksha R Fulari Megha Gorakh	Dr. S. J. Chavan
7.	Ecophysiological studies on weeds from arid region	Thorat Tejashree Manoj Takale Harshada Vijay	Dr. (Mrs.) M. P. Patil

Zoology :

Sr. No.	Name of the Project	Name of Students	Name of Guide
1.	Diversity of Dung beetles from Baramati Tehsil	Ms. Sokate Vaishnavi Sunil Ms. Wagh Supriya Mahadev Ms. Barage Monika Dattatray Ms. Jain Pratiksha Santosh	Dr. V.B.Nale
2.	Comparative Study of Entomotoxicity & Antimicrobial Activity of Plant extract against <i>Sitophilus Oryzae</i>	Mr. Lonkar Dipak Gajanan Ms. Tamhane Apurva Baban Ms. Waghmode Sagar Dnyandeo Ms. Khomane Ashwini Shankar	Mr.. S.L.Londhe
3.	Studies on degradation of Honey bee venom protein by Neem plant leaves aqueous extract.	Ms. Shivarkar Manali Vijay Ms. Rajmane Dhanshri Jaikumar Ms. Shinde Neha Sarjerao	Mr.. M.B. Atole

Physics :

Sr. No.	Name of the Project	Name of Students	Name of Guide
1.	Thin films by thermal evaporation	Chandgude Dipti Digamber	Dr R D Kale
2.	Thin films by thermal evaporation	Chandgude Manali Digamber	Dr R D Kale
3.	Water level Controller	Dharmadhikari Vidhya Ramkrushna	Dr A E Kalange
4.	Synthesis of Silver Nan particles	Gadekar Nikita Dadaso	Dr R T Sapkal
5.	IR Transmitter and Receiver	Gaikwad Dhanshri Vishwanath	Dr A E Kalange
6.	Solar Tracking	Ghadge Vinayak Balasaheb	M K Kokare
7.	Wireless switching using IC CD 4027	Godase Mayur Bajrang	Dr A E Kalange
8.	Thin films by Spray Pyrolysis	Hambire Reshma Chandrashekhar	Dr V S Mohite
9.	Synthesis of Silver Nan particles	Jagtap Harshada Hanumant	Dr R T Sapkal
10.	Synthesis of Nanoparticles by Hydrothermal	Kaule Sonali Arun	Dr R T Sapkal
11.	Synthesis of Silver Nan particles	Kokate Aishwarya Rajendra	Dr R T Sapkal
12.	Thin films by Spray Pyrolysis	Mhetre Madhuri Sunil	Dr R T Sapkal
13.	Synthesis of Nanoparticles by Hydrothermal	Mohite Nisha Santosh	Dr R T Sapkal
14.	Mobile Projector	Patil Pranav Govind	Dr S B Kulkarni
15.	Thin Films by CBD	Phadtare Kajal Babaso	Dr V S Mohite
16.	Thin films by Spray Pyrolysis	Sankpal Nilam Narayan	Dr R T Sapkal
17.		Shelar Mohini Tukaram	

18.	Thin Films by CBD	Shinde Supriya Jyotiram	Dr V S Mohite
19.	Thin films by Spray Pyrolysis	Tamhane Yogita Pandurang	Dr V S Mohite
20.	Thin films by Spray Pyrolysis	Zol Mohini Bharat	Dr V S Mohite
21.	Automatic washroom light switch	Jadhav Vinaya Narayan	Dr A E Kalange
22.	IR Remote Switch	Kulkarni Akshata Arvind	Dr A E Kalange

16. Faculty improvement activities such as training courses, seminar.

Training course organized :

Sr.No	Title of Workshop	Name of Speakers	Participants	Date of Workshop
1	NET-SET Preparation	Dhawal V.Doshi	Microbiology-48 Botany-48 Zoology-48 Total-114	22/02/2018
		Miss. T.D. Nadaf	Microbiology-48 Botany-48 Zoology-48 Total-114	
		Mr. Suresh Palve	Microbiology-48 Botany-48 Zoology-48 Total-114	

Training course (Participated) : (Common to all)

Sr.No	Title of Workshop	Organized By	Participants	Date of Workshop
1	Application of FTIR	Tuljaram Chaturchand College Baramati	10	12/12/18
2	One day Workshop entitled "Use of Statistical Tools in Research Data Analysis"	Shardabai Pawar Mahila Mahavidyalaya, Shardanagar	02	30/01/2018 to 31/01/2018
3	SDS-PAGE Electrophoresis	Tuljaram Chaturchand College Baramati	10	08/02/2018 to 09/02/2018
4	One day Workshop entitled "NET-SET"	Tuljaram Chaturchand College Baramati	03	22/02/2018

	Preparation”			
5	Fermentor Demonstation	Tuljaram Chaturchand College Baramati	06	13/03/2018

17. Outreach activities conducted and their impact / follow up

Sr. No.	Class	Name of students	Name of institute	Duration
1	S.Y.B.Sc. Microbiology	Gawade Trupti Sonawane Kiran	Ferrero India Pvt ltd MIDC, Baramati	15 days
2	T. Y. B. Sc Zoology	Ms. Rahudkar Kajal Bharat	training in Explores & Understand DNA by Bio Era Life Science Private Ltd., Pune on 22 nd to 23 rd Aug. 2017	Two days

18. Any outstanding achievement by student/faculty (merit, award, research paper, presentation in national/international conference/ etc; full citation to be provided)

Participation:

Name of students	Type of event	Venue	Dates
Tamhane Apurva Baban Adagale Mansi Arvind	Avishkar at Zonal Level research compitition	BJ's Wagholi , Pune	20-04-2017

19. List of Short term training courses/workshops conducted for students and faculty, including title, duration, no. of beneficiaries

Department	Title	Duration	No. of Beneficiaries
Microbiology	SDS- Gel Electrophoresis	08/02/2018 to 09/02/2018	79
	Application of FTIR	12/12/2018	31
	Workshop conducted by Bio-Era Research and Development Pvt. Ltd., Pune.	22/08/2018 to 23/08/2018	07
	Soft Skill Development Programme	14/02/2018	31
	Motivational Training Programme.	02/08/2018	84

Botany	Application of FTIR	12/12/2018	?
	Soft Skill Development Programme	14/02/2018	?
	Motivational Training Programme.	02/08/2018	?
Zoology			
Physics	PCB Design and fabrication	08 to 13/01/2018	45
	ICANN 2017	7-9 Dec. 2017	50

20. Guest lectures :

Microbiology :

Sr. No	Title of Guest Lectures	Name of Speakers	Participants	Date of Lectures
1	Scientific Communication	1) Dr.Deewane 2) Dr.Bhole B.D 3) Dr.Kshirsagar V.J	48	07/03/18
2	Research	Singh	79	31/01/2018
3	Recent Techniques in Immunology	Dr.paresh Vishawsrao	48	07/09/2017

Zoology :

Sr. No.	Name of Faculty	Designation	Host Institute	Duration of Visit	Topic of lecture / discussion	Participants
1	Dr. Saroj Ghaskadabi	Professor	Zoology Department, SPPU, Pune	30.01.2018	Genome organosation	35
2	Dr. Chanda Nimkar	Scientist	NARI, Phaltan	10.02.2018	New breed of sheep, Suwarna Nari.	35
3	Dr. Priyanka Dutta Saha	Assistant Professor	Modern College, Shivajinagar, Pune.	16.02.2018	Dragonfly & Damselfly	30
4	Dr. Netral Kulkarni	Assistant Professor	Modern College, Shivajinagar, Pune.	16.02.2018	Protein Synthesis	30

Physics :

Sr. No	Title of Guest Lectures	Name of Speakers	Participants	Date of Lectures
1	Experimental Techniques in Physics	Dr K Y Rajpure	48	9/02/2018
2	Physics Experiments	Dr. V. H. Raybaghkar, Wadia College Pune	135	6/02/2018
3	NET/SET preparation	Prof. More T. B Prof. Ashok Kamble Prof Phadtre P Prof Borate H Dr Nimbalkar R Dr Kakade Sandip	55	15-20 /01/ 2018

21. Visits to industries, institutes etc (name of place, duration of visit and no. of students)**Microbiology :**

Name of place	Duration of visit	No. of Students
NIASM (National Institutes of Abiotic Stress Management)	14/12/2017	15
Late Manikbai Chandulal Saraf Blood Bank	13/03/2017	30
Mala's Fruit Pvt. Ltd	12/01/2017	77

Botany :

Name of place	Duration of visit	No. of Students
1. Department of Botany, Osmania University Hyderabad 2. Botanical Survey of India, Deccan circle, Hyderabad 3. Central Institute of Medicinal and Aromatic Plants, Hyderabad	04/02/2018 to	15
Aundh, Kartikswami	17/02/2018	26

Zoology :

Name of place	Duration of visit	No. of Students
Sericulture, Apiculture, Dairy Farm & Poultry at KVK, Baramati	19-08-2017	30
NIO, Goa.	15 th to 17 th Jan. 2018	27

Physics :

Name of place	Duration of visit	No. of Students
Science Park at Pimpri-Chinchwad, Dist Pune And Mukangan Pune	21/02/2018	45

22. List of lab manuals / SOPs generated for all participating departments**Microbiology :**

- Spectrophotometer
- Colorimeter
- pH meter
- Autoclave
- Laminar air flow cabinet
- Cooling centrifuge

Botany :

- Flame photometer
- UV- Vis spectrophotometer
- Microphotography
- BOD incubator

Zoology :

- Spectrophotometer
- Colorimeter
- pH meter
- Autoclave

- Laminar air flow cabinet
- BOD incubator
- Rotary Shaker

Physics :

- Vacuum Evaporation and Electron beam Evaporation
- Spray Pyrolysis System
- Potentiostat
- Chemical Bath deposition
- Synthesis of Nanomaterials by Hydrothermal method

23 Feedback mechanism adopted (to be indicated in term of how the quality of teaching and hands on training improved)

The college has a feedback mechanism for receiving and analyzing the student feedback on the various activities organized in the college. We have designed a feedback mechanism for the different activities conducted under STAR College scheme. The feedback is collected on specially designed form / students remarks on the register.

24. Any special innovative approach adopted by the college in improving the UG education

- Pre admission counseling
- Induction program
- Preliminary and term end examinations
- Soft skill program at entry and exit level
- Use of ICT for teaching
- Organization of guest lectures
- Use of ICT in teaching learning process.
- Animal films shown to the students
- Preparation of PPT's for teaching
- Use of Models
- Use of charts

25. A summary on “how the Scheme helped in strengthening of the UG education and what would not have been possible without this” (not more than 1000 characters)

The program helps to strengthen the laboratory and infrastructural facilities for the students. Hands on exposure to the various experiments improve the practical skills of the students. The scheme provides an opportunity to undertake project at S.Y. and T. Y. B. Sc. Level. Students learn how to design experiments, learn how to do referencing, research methodology and scientific writing from the minor research projects. The communication and soft skill program improve the skills among the students. Also, the exposure through guest lecturers provides an opportunity to interact with the experts/ eminent scientist in the field.

Overall the scheme has played a significant role in thorough understanding of the subject and development of the students. DBT-STAR college scheme made us to achieve NAAC A+ Grade (CGPA 3.55) for 3rd cycle of NAAC accreditation. NAAC peer team interacted with students under STAR college scheme it was found that these students were more confident. The chairman of peer team was happy for their performance.

DBT – STAR college scheme also helped us to achieve best college awards and best Principal award from Savitribai Phule Pune University during the academic year 2016-17.

26. Suggestions/feedback for improving the scheme

STAR college scheme is very good for the UG students for improving their overall skills in terms of their hands on experiments, communication skill and increasing their vision due to visit conducted to industry and research institutions.

We have following suggestions for improving the scheme.

1. We would be happy to know clear guidelines regarding the expenditure under the head “recurring grant” especially remunerations for resource persons.
2. If DBT identifies the names of scientist from different research institutes, it will be easier for us to place the students for summer training.

27. DBT STAR College advisory committee.

DBT Representative

1. Dr. C. V. Murumkar – Principal, Tuljaram Chaturchand College, Baramati
2. Dr. Suman Govil – Advisor HRD, New Delhi
3. Dr. Garima Gupta – Scientist D, Nodal Officer for STAR College Scheme, Department of Biotechnology, Government of India,

New Delhi.

External Experts

4. Dr. K. K. Krushnani - Head School of Ediapetic Stress Management, National Institute of Abiotic Stress Management (NIASM), Baramati
5. Dr. K. C. Ahire - Dept. of Zoology, Savitribai Phule Pune University, Pune

Coordinator & Member Secretary

6. Dr. S. J. Sathe - Coordinator

Coordinator & Member Secretary

7. Mrs. Y. R. Mulay - Coordinator for Microbiology Dept.
8. Dr. A. B. Telave - Coordinator for Botany Dept.
9. Dr. V. B. Nale - Coordinator for Zoology Dept.
10. Dr. R. D. Kale - Coordinator for Physics Dept.

COORDINATORS DETAILS



Name : Dr. Shivaji Jagannath Sathe
Designation : Coordinator DBT-STAR College Scheme
Associate Professor & Head,
Department of Microbiology
Vice Principal, Tuljaram Chaturchand College,
Baramati
Address : P. O. Box – 051, Baramati, Dist. Pune
413102 (Maharashtra)

COLLEGE LOGO







