

Annexure I

Sr. No					
1	Name of the College	K.J.Somaiya College of Science and Commerce, Vidyavihar, Mumbai			
2	Status(Govt./ Govt. Aided/ Autonomous/Pvt)	Autonomous, Govt .aided			
3	Women's College or Co-educational	Co-educational			
4	Urban/Rural	Urban			
5	No. of departments supported	6			
6	NAAC Ranking + Year	A grade in 2004, 2010 and 2016			
7	Details of extramural funding received in the last 3 years (UGC, DBT, DST; duration, period and amount)				
Sr No	Funding Agency	Duration	Period	Amount sanctioned	Amount Received
1	DST- FIST	2013-2018	5 YEARS	90,00,000/-	79,50,000/-
2	DBT	2014-2017	3 YEARS	69,00,000/	13,00,000/-
3	UGC	2016-2021	5 YEARS	Not yet declared	NIL

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

	2012-2013		2013-2014		2014-2015		2015-2016		2016-2017	
CLASS	Applied	No of seats	Applied	No of seats	Applied	No of seats	Applied	No of seats	Applied	No of seats
FYBSC	1831	600	2547	600	2077	600	2362	600	2569	600

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

CLASS	2012-13	2013-14	2014-15	2015-16	2016-17
FYBSC	502	553	560	585	590

10. Change in the cut off percentage/admission

CLASS	BEFORE STAR		AFTER STAR		
	2012-13	2013-14	2014-15	2015-16	2016-17
FYBSC	50%	50%	60%	70%	70 %

11. Change in the dropout rate
NA (No drop outs)

12. Data on pass percentage (UG level)
T.Y.B.Sc result :

Year	Pass Percentage
2012-13	74.87
2013-14	78.35
2014-15	79.63
2015-16	84.48

13. Data on how many students opted for PG courses
75 percent students opt for PG courses.

14. List of additional practicals introduced

Microbiology :

F.Y.B.Sc

- Study of anaerobes
- Use of haemocytometer
- Effect of soaps and sanitizer on normal flora of skin
- To study effect of copper vessel as a storage container for water.
- Cough plate technique
- Use of micropipettes

S.Y.B.Sc.

- Microbiological analysis of milk products(butter, ghee, icecream & cheese)
- Use of pre-coated TLC plates(proposed)
- **T.Y.B.Sc**
- Preparation of silver nanoparticles.
- Preparation of all reagents and standardization of all chemical assays.

Biochemistry:

Techniques introduced

- Conducting dilutions for various experiments using micropipettes.
- Immunodiffusion
- Immunoelectrophoresis

Practicals:

- Determination of Hemoglobin contents sahli's method
- RBC's and WBC's Cell count
- Blood grouping analysis and Rh typing

Demonstrations:

Students from biochemistry department participated in the **Nutritional Awareness Programme** on 10th and 11th October 2015. They promoted concept of healthy eating by making nutritionally rich innovative food items and setting up a stall.

Zoology:

- Estimation of Cholesterol and triglycerides from human serum
- Spotting related to fitnesss & drug addiction
- Zoo Keeping- Design & economics

- Computer s- intro to hardware and software
- Estimation of liver/muscle glycogen
- Estimation of carbohydrates, free amino acids
- Writing a patent application
- Identification of marine zooplankton & its mounting
- Identification of sea weeds
- Determination of $\text{PO}_4\text{-P}$, silicates, BOD and COD

Chemistry:

Techniques introduced

- Two burette Method
- Microscale Technique
- Extraction of Limonene from Oranges using Steam Distillation technique
- Preparation of Paracetamol
- Synthesis of of Azo dyes
- Manufacture of Thiokol rubber

Physics:

- Ultrasonic Interferometer
- Coupled Oscillator
- Double slit diffraction using LASER
- Interfacing Buzzer motor relay with logic gates
- LVDT
- Photodiode/ Transistor
- Hall Effect

Botany

S.Y.B.Sc. (63 students)

- To estimate enzyme peroxidase from potato tuber
- To study the activity of enzyme papainase from papaya latex.

T.Y.B.Sc. (10 students)

- To perform various sterilization techniques.
- Encapsulation of Axillary bud

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

Supervised by all faculty members of the departments.

Microbiology			
Number of students	Class	Title of the project	Duration in months
25	F.Y.BSc.	Survey of air microflora at different locations	01
20	"	Potability of water available at railway stations	02
21	"	Preservation of cultures by various methods	03
01	S.Y.BSc.	Effect of on probiotic bacteria virulence factors of <i>Candida albicans</i>	03
01	"	Antibacterial activity of probiotic bacteria on some common pathogens	03
24	"	Study of surface flora of vegetables	02
25	"	Bacteriological analysis of fresh fruit juice	03
07	T.Y.BSc.	Isolation of ink degrading bacteria from soil and sewage water.	03
08		Identification of organisms producing dental biofilm.	03
04		Survey of bacterial infections in the last 6 months in Municipal and Private Hospitals of Mumbai	03
06		Adulteration tests for milk products	02
06		Antimicrobial Effect of Spices and Determining its Bacteriostatic or Bacteriocidal Effect.	03

Chemistry

Number of students	Class	Title of the project	Duration
200 Students	S.Y. B.Sc.	Study of periodic table in terms of discovery, important physical and chemical properties and applications of the element by semester III students.	June- Sept 15
6 Students in each	T. Y. B. Sc.	Physical Chemistry: 1) Study of thermodynamic parameters and kinetics of acid catalyzed ester hydrolysis. 2) Study of kinetics of chemical reactions using instrumental methods. 3) Determination of mean ionic activity coefficient of an electrolyte using emf method	June- Sept 15
6 Students in each	T. Y. B. Sc.	Inorganic chemistry: 1) Analysis of drinking water from different institutions in the campus. 2) Analysis of Ca- tablets of different brands to find out Ca- content.	June- Sept 15

6 Students in each	T. Y. B. Sc.	Organic chemistry: 1) Nitration of different organic compounds. 2) Esterification of organic acids. 3) Erlenmeyer Azalactone synthesis. 4) Osazone formation reaction. 5) Synthesis of hydantoin.	June- Sept 15
6 Students in each	T. Y. B. Sc.	Analytical chemistry 1) Use of different indicators in complexometric titrations. 2) Use of masking agents in complexometric titrations. 3) Analysis of different brands of honey.	June- Sept 15

PHYSICS

Number of students	Class	Title of the project	Duration
Tamanna Tanwar Chinmayi Sutar	T.Y.B.Sc	Inverter	3 months
Mudita Sonawane Madhuri Gawade	T.Y.B.Sc	Musical instrument using 555 timer as Astable Multivibrator	3 months
Aakash Ramdharne Tejasvi Kamble	T.Y.B.Sc	555 Timer Integrated Circuit Tester	3 months

Rahul Dave Suraj Bera	T.Y.B.Sc	Compound pendulum (large Amplitude)	3 months
Abhishek Ladha Praveen Bhitale	T.Y.B.Sc	2G Network Detector (via cell phone)	3 months
Shubham Kadam Dinkar Prajapati	T.Y.B.Sc	5V Solar Mobile Charger	3 months
Mandar Varadkar Nikhil Bodhare	T.Y.B.Sc	Fan powered by Solar Power	3 months

Vivek Pagare Shailendra Yadav	T.Y.B.Sc	Thermistor based fire alarm	3 months
Shama Siddiqui Samiunnisa Chowdhary	T.Y.B.Sc	RF Signal strength Detector	3 months
Pooja More Vandana Mishra	T.Y.B.Sc	Pressure monitoring System	3 months
Naba Nazneen Chougale	T.Y.B.Sc	Low cost , small size , portable Mobile charger	3 months
Suraj Singh Ranjeet Shauhan	T.Y.B.Sc	The Construction and Working of Metal Detector	3 months
Siddhesh Jadhav Sachin Sonawane	T.Y.B.Sc	To generate electricity using excessive temperature difference (Thermo-Couple)	3 months
Alka Gadhavi Gopi Karvat	T.Y.B.Sc	Siren circuit using NE-555 and flashing LED	3 months
Vijay Halwai Imran Chowdhry	T.Y.B.Sc	Op-Amp Integrated Circuit Tester	3 months
Mohammed. Faizee Akash Khandagale	T.Y.B.Sc	LASER Range Finder	3 months
Shahrin Bano Mehjabeen Ansari	T.Y.B.Sc	Water level Indicator	3 months
Kaiser Jahan Arzoo Qureshi	T.Y.B.Sc	Interfacing NAND gate with buzzer relay, DC motor and LED	3 months
Rukhsar Shaikh Sajida Khaboon	T.Y.B.Sc	Testing of Components	3 months

Botany

Number of the students	Class	Title of Project	Duration
01	T.Y.B.Sc.	Study of some fungal diseases and its control measures	2 months
01	T.Y.B.Sc.	Study of fresh water aquatic plants	2 months
01	T.Y.B.Sc.	Study of some of	2 months

		the medicinal herbs in daily life	
01	T.Y.B.Sc.	Study of algal bloom as biofuel	2 months
01	T.Y.B.Sc.	Study of Genetically Modified crops	2 months
01	S.Y.B.Sc.	Study of aromatic plants used in aromatherapy	2 months
01	F.Y.B.Sc.	Study of some medicinal plants	2 months
01	F.Y.B.Sc.	Study of useful Bacteria in Human Life	2 months
01	F.Y.B.Sc.	Collection and identification of Fungal Diseases in plants	2 months
01	F.Y.B.Sc.	Isolation and study of activity of enzyme – amylase	2 months
01	F.Y.B.Sc.	Study of Enzyme activity in germinating oil seeds	2 months
01	F.Y.B.Sc.	Isolation and study of activity of enzyme – Invertase	2 months
01	F.Y.B.Sc.	Isolation and study of activity of enzyme – dehydrogenase	2 months
01	F.Y.B.Sc.	Extraction of Natural dyes	2 months
01	F.Y.B.Sc.	Shades of Herbal Dyes	2 months
01	F.Y.B.Sc.	Studying the significance of	2 months

	Biofertilizers	
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Zoology

Number of students	Class	Title of the project	Duration
10	TYBSc	A survey on the leopard sightings along the periphery of Sanjay Gandhi National Park, Mumbai	03 months (Nov 15 to Jan 16)
12	TYBSc	Qualitative and quantitative analysis of Monosodium Glutamate from street food in Mumbai	03 months (Nov 15 to Jan 16)
07	SYBSc	National Health Awareness Programme (data collection)	03 months (Nov 15 to Jan 16)
07	SYBSc	Water Analysis	03 months (Nov 15 to Jan 16)
06	SYBSc	Drug Addiction	03 months (Nov 15 to Jan 16)
09	SYBSc	Food Adulteration	03 months (Nov 15 to Jan 16)
03	SYBSc	Survey of Haemoglobin	03 months (Nov 15 to Jan 16)
07	SYBSc	pH of soaps and facewash samples	03 months (Nov 15 to Jan 16)
09	SYBSc	Milk adulteration	03 months (Nov 15 to Jan 16)
10	SYBSc	Effect of sanitizers	03 months (Nov 15 to Jan 16)
07	SYBSc	Survey of blood pressure	03 months (Nov 15 to Jan 16)
10	SYBSc	pH of different soil samples	03 months

			(Nov 15 to Jan 16)
Biochemistry			
<p>The students have developed various functional food products rich in nutrition, antioxidants and energy. Outsource the developed products commercially in the market, college campus; tie up with hotels (Taj / Grand Hyatt), food industry etc.</p>			
Number of students	Class	Title of the project	Duration
21	T.Y.B.Sc	Formulation and preparation of nutritionally rich Nutricles	1 year
		Preparation of nutrition and fiber rich Khajur Chocolate	
		Formulation and preparation of nutrition rich NutriSure Powder	
		Formulation and preparation of Multi-nutrient Green chutney	
		Preparation of energy rich dry fruit chocolate bar : Energy bite	
		Development of nutritionally rich Halwa	
		Formulation and preparation of Indian Plum Pickle	
		Formulation and preparation of nutritionally rich Cookies	
21	T.Y.B.Sc	Development of energy rich Swiss rolls	1 year
		Development of calcium rich Cookies	
		Formulation and preparation of Paan shot	
		Preparation of nutritionally rich biscuits – Healthy delight	

16. Faculty improvement activities such as training courses, seminars etc conducted and their impact

Chemistry:

- Dr Yogesh Ghalsasi participated in Three day International conference and Workshop in “ Advances in Bimolecular techniques and Analytical Applications of NMR” at Shri Andavan college, Tiruchirapalli, Tamil nadu.
- Mr. Saurabh Shete participated in the workshop on Analytical Chemistry organized by BARC.
- Dr Veena Khilanani participated in short term course on Research methodology at R. Jhunjhunwala college.
- Dr. Veena Khilnani participated in workshop on Open Source Chemistry Software at IIT Mumbai.
- Five staff members attended International conference on Education in Chemistry organized by Homi Bhabha Centre for Science education and Research (HBCSE)

Microbiology:

- All faculty members attended a seminar on Cyber Security
- Three faculty members attended a workshop on ‘Teacher Training’ on 17th April 2015.
- Seminar on Proteomic Technologies for Biosciences on 25th August 2014 at KBP college Vashi.- attended by Mrs.Shailaja Girishankar, Dr. Mrs. Unnati Padalia: Mrs .Hemlatta Chakraborty and Dr.Lolly Jain
- National Conference on Bioremediation-Recent Trends and Future Prospects on 9th August ,2014 at Royal College of Arts, Science and Commerce, Mira Road – attended by Dr. Mrs. Unnati Padalia and Mrs Soniya Shetty
- National Conference -102nd Indian Science Congress from 3rd January,2015-7th January 2015 at University of Mumbai – attended by Mrs .Hemlatta Chakraborty and Dr.Lolly Jain.
- Workshop on AVISHKAR 2014-Research Convention on 2nd July ,2014 at K. J. Somaiya College of Science and Commerce – attended by Dr.Mrs.Unnati Padalia and Dr.Lolly Jain
- Workshop on Animal Tissue Culture on 27th August, at G.N.Khalsa College attended by Mrs. .Hemlatta Chakraborty and Mrs. Soniya Shetty
- Lecture series –“Research ,Ethics and Patents” on 17th May 2014 at D.Y.Patil University ,Navi Mumbai. attended by Dr.Lolly Jain
- Lecture series and Workshop –Publication ,Funding and Presentation on 16th August,2014 at D.Y.Patil University ,Navi Mumbai.- attended by Dr.Lolly Jain

- Presented project at Savishkar –iFAST National Symposium and Exhibition held at MANIT, Bhopal held from 26th to 28th Feb 2015. - Mrs. Soniya Shetty
- Workshop on “Techniques in Molecular Biology” from 19th-23rd August,2014 at Wilson College Mr.Shabib Khan
- National Conference on Role of Governance, Leadership and Management in Institutional Quality Improvement - attended by Mrs.Shailaja Girishankar, Dr.Mrs.Unnati Padalia , Dr.Lolly Jain, - Mrs. Soniya Shetty and Mr.Shabib Khan

17. Outreach activities conducted and their impact/ follow-up

Intercollegiate Science festivals of departments:

Rasayan: Department of Chemistry

- Theme: ‘GO GREEN’ RESUSE, REDUCE, RECYCLE and RECRATE
- No of the Events: 10
- Total participant: 120
- No of the participant : 40 (out side the college)
- Venue: Department of Chemistry

Rasayan Events:

- DHARMASANKAT: Situational Game
- KUTNEETI: Fun entertaining Dodge ball event, if ball hits the participant he/She should have to reply to a given chemistry question with in 10 second.
- SANGHARASH: Debate event (a topic like Nuclear Weapons: Boon or Curse was give) which requires sound acumen of chemistry and debate skill.
- BHAVISHYVANI: Be a chemistry fortune teller who will analyze the current situation of India in terms of chemistry
- CATENATION: BEHAVE LIKE A CARBON EVENT: when music stops name of chemical compound will be called out, participants have to form the carbon chain of that given compound.

- C PALN: Certain problems will be given to participants and they have to make CHEMISTRY-plan to solve the problem.
- RASAYAN LEELA: Brush up your creativity and weave out an amazing story based on reaction
- CHEM-O-HUNT: Treasure Hunt Event where the answers will be hidden under the layers of chemistry.
- 3rd DIMENSION: Participants have to bring model of chemical compound from recyclable materials only.
- KISMAT-CHEMISTRY ELEMENT HOUSIE GAME: Participants will be given housie cards with numbers and these numbers are the atomic numbers.
- Kaya-Kalp Exhibitions: There were models and charts and live demonstration of certain chemical reaction.

MICROSCOPE- Microbiology

Date: 02/09/2015

No of participants: 133 from all biological sciences

- Quiz
- Power point presentations
- Petri plate painting
- Poster making
- Spell-bee

- Hocus-Focus
- Treasure Hunt
- How deep is your love for biology?
- Micro-Combat
- Biorangoli
- Ad-Mad Show

Microbiology department also participated in,

- Science Exhibition: at The Somaiya School on 20th September,2014

Students demonstrated interesting microbiology experiments to student

visitors from various schools.

- TIFR Open Day on 22nd and 23rd November 2014

Students participated as volunteers and guided school students from all

over Maharashtra through the events.

- International Physics Olympiad: S.Y.B.Sc. students were selected as volunteers after a selection round.
- 14th state level microbiological Olympiad 70 students participated (48 F.Y.B.Sc, 09 S.Y.B.Sc and 13 T.Y.B.Sc students)
- 12th position in the T.Y.B.Sc category .
- Ranked 24th in the S.Y.B.Sc category.
- 13th position in F.Y.B.Sc category.

FIZIKA 2K16” :Physics

6th February 2016.

No of participants: 260

- Crossword
- Quiz

- Treasure Hunt
- Photography Competition
- Poster Competition

Other activities:

- Publication of bi annual news bulletin “BHAUTIKI”
- “STUDENTS CORNER” where students share their enthusiasm for physics.
- BASE programs in collaboration with HBCSE
- Placement guidance
- Olympiads
- International collaboration for students tournaments INST Russia

Biochemistry - ‘Health Fair – Food Fest’

8th August‘2015

- Poster Competition
- Health Court
- Treasure Hunt
- Health Drink preparation (VEGETARIAN ONLY)
- Ad-mad show
- Biorangoli
- Bio Jingle
- Bio Pictionary

Biochemistry department had organised a ‘Routine Biochemical tests package’ on 12th, 13th & 14th January’2016 for the entire staff , students of Somaiya Vidyavihar and staff of Somaiya Head office and also for the

Ghatkopar residence at just for Rs.400/- per individual. The following tests were included in the package:

1. Blood Glucose (Fasting/PP/Random)
2. Entire lipid profile (Including Cholesterol, Triglycerides, LDL,HDL,VLDL)
3. Hematology - CBC (complete blood count), haemoglobin & blood group.
4. Bone function tests - Calcium, Uric acid & Rheumatoid arthritis (RA test)
5. Liver function tests - SGPT & SGOT
6. Kidney function tests - Creatinine & Blood urea nitrogen (BUN)

Total 167 people enrolled and got their routine tests done. A very positive feedback was received from many people who came to take their reports.

Botany:

A National Workshop on “Current strategies for the management of water hyacinth” in collaboration with Naushad Ali Sarovar Samvardhini (NASS), Maharashtra State Angling Association (MSAA) and Indian Association of Aquatic Biologists (IAAB), on 9th August, 2014 at Kodarkar field station, Powai, dedicated to the memories of the great limnologist and pioneer of I.A.A.B., Late Dr. M.S. Kodarkar.

This is followed by demonstration of removal of Water Hyacinth by the students, to create awareness.

Zoology:

Zorilla: Inter college event

Date: 19th & 20th December 2014

Number of participants in 2014-15 was more than 400.

Theme - Environment, Nature, Conservation,

Concepts in Biological sciences, Animal world

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

Chemistry

- Mr. Yash Punjabi presented a paper entitled “ Urease inhibiting activity of the flower extracts of Nymphaea Nouchali” in UGC sponsored International conference on “Innovations in Chemical research and Applied Chemical sciences” at CHM college.
- Mr. Yash Punjabi, Dr.Veena Khilnani and Mrs. Padmaja Damle published a paper “ Anti bacterial Activity of Flower Extracts of Nymphaea Nouchali” in International Journal, Pharmacophore 2014 Vol 5(2), 352-357.
- Students participate at the UG and the PG level in the research festival ‘Avishkar’ of University of Mumbai and “Research Scholars meet” organized by Indian Chemical Society, Mumbai branch, hosted by different colleges of Mumbai university.
- Ms. Rashi Gupta ,T.Y.B.Sc (Chemistry) was selected for the two year National Institute of Undergraduate Studies (NIUS) project held by HBCSE which was funded by the Department of Science and Technology(DST), She worked at Cipla R & D on ‘Method development and method validation of UV spectrophotometric method for assay and dissolution of drug product’.

Microbiology:

- Ms. Sayali Dagde (F.Y.B.Sc) guided by Mrs. Soniya Shetty worked on a project entitled “Antibacterial Efficacy of Soaps” Presented Posters at :
 - Sajjan Gupta Konark Memorial Award Meet at K. C. College on 21st and 22nd January 2015 .
 - UGC sponsored state level Workshop on ‘Microbial Frontiers in Health and Hygiene’ held at Elphinstone College on 2nd and 3rd January 2015.

- Khan Simab and Yadav Padmaja (F.Y.B.Sc) selected for the 'National Initiative on Undergraduate Science' program (NIUS) of Homi Bhabha Centre for Science Education in Collaboration with TIFR and BARC. 27th October to 31st October, 2014.
- Internships in hospitals and pathology laboratories arranged for fourteen students (F.Y.BSc. and S.Y.BSc.)
- Ms. Kothari Jimisha H participated in the Second International Science School Applied Chemistry and Materials Science at St.Petersburg State University, Institute of Chemistry during 12th -17th November,2014
- Mr. Varun Apte -First prize in Power Point Presentation at MICROSCOPE 2014, held on 21st November,2014.

Zoology:

- Prizes won by Zoology Students at the Intercollegiate event
- Zorilla' organized by Zoology Department-
- F.Y.B.Sc. Students (CBZ) Shweta Chakrani, Pooja Jagtap, Ameya kadam and Neil Badiani were the winners of Treasure Hunt
- Khushboo won 3rd Prize in Nail Art

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

Microbiology:

Workshops				
Number of the student	Class	Name of the institute/industry	Title of the project	Duration / Date
21	T.Y.BSc.	G.N.Khalsa college, Matunga	Basic techniques of Animal tissue culture	01 day/26 th Aug, 2015
52	S.Y.BSc.	K.B.P. College , Vashi	VITEK-2 and Advance Phase Contrast Microscopy	02 days/ 7 th -8 th & 9 th -10 th Sept 2015
37	F.Y.BSc.	Z-Bac , Kolad	Adventure training and soft skill development camp	21 st -22 nd December 2015

21	T.Y.BSc.	Mr. Shabib Khan Own institute	Practical Session on Bioinformatics	11 th February, 2015
21	T.Y.BSc.	Mrs. Soniya Shetty	Orientation Session on Avishkar-2014	1 st September, 2014

Activities for teaching and non teaching staff members:

Non- teaching staff (45)	Basic techniques in Microbiology- module 1	20 th -21 st July 2015
Teaching staff and students of non-microbiology department (48)	Basic techniques in Microbiology- module 2	7,8,9 th Sept 2015

Chemistry:

Activities for teaching and non teaching staff members:

63 (students) + 4 (Teachers)	Workshop on safety measures	Dec 21, 2015
73 students	Introduction to instruments and apparatus in lab through chemical reactions	Dec 17 & 22, 2015
27 (Teachers)	Workshop on Micro scale techniques	June 15, 2015
63 (students) + 4 (Teachers)	Workshop on Radiochemistry for Teachers and T. Y. B. Sc. students	June 2015

- Hands on Training of Instruments organized jointly by Department of Chemistry and Zoology from 20th -22nd August, 2015.
- Presentation and Sessions on of Lab safety.

- Hands on training on simple instruments like pH meter, colorimeter, conductometer, Distillation unit, Digital thermostat, pH-balance, spectrophotometer, potentiometer.
- 45 Non-teaching staff members actively participated which brings about better understanding and smooth conduct of practicals.
- Laboratory safety –MSDS workshop
- A seminar and exhibition on Peaceful uses of Atomic Energy in collaboration with Department of Atomic Energy (DAE)
- Abhyas Mahotsav

Biochemistry:

Summer training				
Name of the student	Class	Name of the industry/institute	Title of the project	Duration/Date
Kunal Dilip Palan	T.Y.BSc.	Genesis Labs and Sameerwadi	Extraction of curcumin from turmeric by a novel method	1 st May 2016-31 st May 2016
Drashti Dhiren Shah		Genesis Labs and Sameerwadi		

BIOCHEMISTRY

- A workshop on electrophoresis was organized for the students on 3rd December, 2014 by Mrs. Yogita Narvekar. Students were given hands on training on Vertical Polyacrylamide gel Electrophoresis technique.
- One day workshop/hands on training program on “Analytical techniques used in Biochemical & Nutritional Research” was organized on – 16th February’2015 for the under graduate Nutrition &

Dietetics students of Nirmala Niketan college of Home Science, Mumbai.

Botany:

Workshop / Hands On training				
Number of Students		Resource Institute	Title of Workshop	Duration / Date
43	TY, SY	National Facility for Biopharmaceuticals, G.N. Khalsa College, Matunga	Workshop on Techniques in Molecular Biology	24 th & 25 th July, 2015
32	TY, SY, FY	Indian Bonsai Society, and NASEOH	Workshop on Bosai Making	4 th Aug, 2016
43	TY, SY	Dr. Raut, from Institute of Science, Mumbai	Workshop on Nano Technology	26 th July, 2014.
32	TY, SY, FY	Mrs. Priyanka Khandekar	workshop on "Flower arrangement Ikebana, Western and Free Style	31 st July, 2014

Physics:

- Laboratory maintenance workshop for nonteaching staff in collaboration with WRIC

20. Guest Lectures (details like name of scientist, topic, no. of students)

Microbiology:

Name	Designation	Host	Duration of visit	Topic of
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		institute		discussion
Dr. Hashmathara Jabbar,) on	Scientific Officer,	Bharat Serums.(Ex-Employee	12 th September,2015	'Blood and it's fractionation'
Dr. Amol Hosing,	Scientific writer,	Novartis Healthcare,	16 th January,2016	'Career in Scientific Writing'
Enriching Expressions Series by Alumni				
Mr. Kumaraswami Sivan.	Deputy General Manager	IRIS Healthcare Pvt. Ltd	12 th July, 2014	Competency based approaches for challenges facing Microbiology and Biotechnology graduates'
Dr. Neelima-Khairatkar-Joshi,	Senior Vice-President, Centre, India Head, NCE Discovery	Glenmark	28 th August, 2014,	Innovative therapeutics: Today, Tomorrow and Thereafter'.
Dr. Vilas Sinkar.	Vice Presiden, Research & Development , and Head	Unilever R&D, Bangalore	15 th September,2014	'Microbiomics'
Dr. Pradnya Prabhu,	Associate Professor	K.J.Somaiya College of Science and Commerce.	10 th February 2015.	Lecture – demonstration on bioinstrumentation

Physics:

Name	Designation	Host institute	Duration of visit	Topic of discussion
Dr.J.K.Verma	Retired HOD	IIT KANPUR	3 rd December 2015	General theory of relativity
Dr Bram Boroson	Professor	Clayton State University	15 th December 2015.	Special theory of relativity
Dr. Rajendra Mahamuni,	Head of Photography	Fergusson College, Pune	One day workshop 16 th January,2016	Photography workshop

	Department			
Dr. Jehangir Mistri,	Dean, Xavier's Institute of Communication	Mumbai	6 th February 2016	Passion for Physics"
Ms. Vinita Navalkar	senior research scholar at TIFR.	TIFR. Mumbai	6 th February 2016	"Astrostat"

Biochemistry:

Name	Designation	Host institute	Duration of visit	Topic of discussion
Dr. Chetan Vedpathak	Proprietor "SWASTHYAM" an authentic Ayurvedic Pharmacy & Clinic and Ayurvedic Consultant	Velankar Ayurvedic Ausahdhalaya and Pooja Ayurved Bahndar	12 th January 2016	"Lifestyle & Ayurveda"
Dr. Vinod Sawant	Associate Professor and Consultant Physician	YMTH Medical College and Sawant clinic, Center for Integrated Homoeopathy and Family Medicine	12 th January 2016	"Diabetes: A Challenge"
Dr. Allan Almeida	Consultant Nephrologist and Transplant Physician and Director, Clinical Research	PD Hinduja Hospital & MRC	12 th January 2016	"Treat your Kidneys well: it is worth your while".
Dr. Ulka Natu	Consultant gynecologist; Expert,	Ministry of AYUSH and Prajnana	12 th January 2016	Yoga for Health, Healing & Harmony"

	committee of MCH and Director	Yoga Anusandnana Kendra.		
Dr. Sushma Sonawane	Psychiatry		13 th January 2016	“Stress Management”
Dr. Binoti Seth	Consultant Orthopedic Surgeon		z	“BONES FIT, LIFE SUPERHIT”.
Dr. Neelam Bhise	Reproductive Endocrinologist, Endoscopy surgeon (laparoscopy)	Genesis fertility & Asian Surrogacy	13 th January 2016	“Female Fertility-Facts & Myths”
Dr. Vinayak Joshi	Consultant Neurosurgeon		13 th January 2016	“Mind Your Nerves: Diseases of Central Nervous System”
Dr. Madhav Rege	Senior Occupational Health Consultant & Health Strategist	Tata Motors, Clariant Chemicals India, Lubrizol India Pvt. Ltd., Indian Chemical Council.	14 th January 2016	“General Health Awareness & Current Health Issues”
Dr. Geeta Niyogi	Dean and Gynecologist	K J Somaiya Medical College & Research Centre.	14 th January 2016	“Journey of a Woman- From Womb to Tomb”.
Dr. Shital Poojari	Professor & Head, Department of Dermatology	K J Somaiya Medical College & Research Centre.	14 th January 2016	skin related problems and their care and treatments
Dr. Dilip Gaitonde	Head Department of ophthalmology	Singhania Hospital	14 th January 2016	Various eyes problems and the latest technologies in ophthalmology

Chemistry:

Name	Designation	Host institute	Duration of visit	Topic of discussion
Prof. Dr. (Mrs.) Z.R.Turel and Dr. S.K.Malhotra	Public Awareness Division	Department of Atomic Energy	26 th July 2014.	Popularizing the peaceful uses of atomic energy
Abhyas Mahotsav for UG students				
Prof A V Karnik Dr. Ajagaonkar	Head, Department of Chemistry University of Mumbai Ex-Head Department of Chemistry	University of Mumbai	November 2014	Stereochemistry Quantum Mechanics
Dr. B. H. Mehta	Ex-Head Department of Chemistry University of Mumbai	University of Mumbai	November 2014	Group theory

Physics:

Name	Designation	Host institute	Duration of visit	Topic of discussion
Dr.J.K.Verma	Retired HOD	IIT KANPUR	3 rd December 2015	General theory of relativity
Dr Bram Boroson	Professor	Clayton State University	15 th December 2015.	Special theory of relativity
Dr. Rajendra	Head of Photography	Fergusson College,	One day workshop 16 th	Photography workshop

Mahamuni,	Department	Pune	January,2016	
Dr. Jehangir Mistri,	Dean, Xavier's Institute of Communication	Mumbai	6 th February 2016	Passion for Physics”
Ms. Vinita Navalkar	senior research scholar at TIFR.	TIFR. Mumbai	6 th February 2016	“Astrostat”

Botany:

Name	Designation	Host institute	Duration of visit	Topic of discussion
Dr. Nandini Thatte,	Private Practitioner of Ayurveda		18 th July, 2014	Know Your Prakriti
Dr. Raut,		Institute of Science, Mumbai	26 th July, 2014	Nanotechnology: A Tiny Revolution
Mr. Prashant Mahajan,	Director and Learning Catalyst	Center for Experiential Learning	13 th January, 2015	Vegetation Mapping Survey
Dr. Jai Tilak-Jain,	Sr. Medical Writer,	Incentive Health Clinical	13 th February, 2015	“Insights in Scientific Writing”

Zoology

Dr. Lima Rosalind	Job Prospects in Zoology and Wildlife	9 th Jan 2016	42 students and 5 staff attended

Department of Zoology introduced a new topic Nutrition and Health in the S.Y.B.Sc. Curriculum to make the students in the adolescent age group of urban region, aware of the various issues related to nutrition and health and the life style diseases.

To make it more relevant and experiential learning a workshop was organised on “Nutrition and Health” on 7th and 8th July, 2014. Ms. Manali Vora, Aluminus of Zoology Dept. was the resource person for the workshop.

Undergraduate students and teachers participated in the workshop Yoga and Pranayam workshops for – support staff of the department to cope up with stress and health issues.

Dr. Kamlesh Agrawal was the resource person for the workshop.

Three guest speakers were invited to deliver a lecture for students

1. Dr. Lalit Sharma,- Bio-mimicry: new vistas for zoologists‘ organised on 27th August 2014.
2. Mr. Ravindra Walmiki, - “Health and Fitness on 16th Feb, 2015.
3. Shri. Narendra Nayak - ‘Scientific exposure of Miracle’ on 12th Feb, 2015.

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

Microbiology:

Number of the student	Class	Name of the institute/industry	Duration/Date
24 and 12	T.Y.BSc. and S.Y.BSc.	Pasteur Institute, Coonoor	01 day
	S.Y.B.Sc., T.Y.B.Sc.	<ul style="list-style-type: none"> ➤ Chandigarh Amritsar, Kasauli and Baddi. ➤ Helios Pharmaceutica I Company. ➤ United Spirits Alcohol Distillery. ➤ India Industries a food processing industry. 	6-days 04 th -11 th December 2014.
	S.Y.B.Sc.students.	<ul style="list-style-type: none"> ➤ Manish pharmaceutical 	12 th February,2015.
	S.Y.B.Sc	<ul style="list-style-type: none"> ➤ BARC Demonstration of the Working of Anaerobic 	13 th February,2015.

		Biogas Plant	
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Biochemistry

Name of the student	Class	Name of the industry/institute	Duration/Date
Kunal Dilip Palan	T.Y.BSc.	<ul style="list-style-type: none"> • National Institute of Oceanography, Goa • Delta Labs, Kudal • Shree Laxmi Vishnu Company, Cashew Industry • Vijaya Bakery, Malvan • Wine Industry, Sawantwadi. 	15 th February 2015 to 20 th February 2015

Botany

Number of students	Class	Name of the industry/institute	Duration/Date
37	TYBSc	Godrej Mangroves, Mumbai	21 st July 2015
79	SYBSc	Vivek Agro Farms, Virar, Mumbai	28 th August 2015
40	SYBSc	Central Institute of Fishery Education, Versova, Mumbai	8 th Jan 2016
8	TYBSc	Konkan Krishi Vidyapeeth, Dapoli,	26 th – 30 th October, 2015

Maharashtra		
Institute	Date	Staff
Horticulture Training Centre (HTC), Talegaon	17 th December, 2014	Dr S.S. Yeragi Mrs. S. Naik Dr. Katdare Dr. Ratnakar Dr. Patankar
K.F. Bioplant, Hadapsar, Pune		Dr. Salvi
National Facility for Biopharmaceuticals, Khalsa College, Matunga	26 th February, 2015	Dr. Veena Salvi
Motibai Thakersy Institute for Research in Mentally Retarded, Sewri	4 th March 2015	Dr. Veena Salvi

Chemistry

- Visit of IIT, Bombay Department of Chemistry: (PG & UG students)
- On 09-Feb-2015 about 60 T.Y.B.Sc students along with three faculty members went on the visit to Chemistry Department of Indian Institute of Technology ,Powai.
- Industrial visit was organized to HEMO PHARMACEUTICALS
- A visit to FOOD and DRUG ADMINISTRATION (FDA) was arranged for T.Y.B.Sc.students.

Physics:

Name of the student	Class	Name of the industry/institute	Duration/Date
50 +5 Teachers	Undergraduate students	IUCAA and CDAC, Pune:	13 th August, 2015
38Students	Undergraduate	Educational visit	27 th January to 2 nd

+3 Teachers & 1 Non Teaching staff	te students	to Astronomy Center (RAC), Tamilnadu	Radio Ooty,	February, 2016.

- GMRT,Pune
 - Plywood Factory, NCR.
 - Computer center, Goa
 - HP software lab, Bangalore
 - Nanotechnology / Biophysics lab, Mumbai
- Zoology:
- Excursion to Achre, Malvan, Kunakeshwar Dist Sindhudurg, Maharashtra. TYBSc, MSc I & II (28th to 31st January 2015)
Students participation- 33
Accompanying Staff: Dr. M. C. Sathe, Dr. Amol Patwardhan and Mr. G.S. Kadam
 - One-Day Excursion to Alibaug and Karnala
SYBSc Students -39
Staff: Dr. R. Nayak , Dr. Veena Srivastava and Mr. Dilip Naik
 - Central Institute of Fishery Education, Versova, Mumbai
students participation - 40
Staff: Dr. Deeplaxmi Satam and Dr. Amol Patwardhan and Mr. G.S. Kadam
 - Somaiya Medical College- Visit to the microbiology and pathology Department
Student participation (SYBSc students)- 68
Staff: Dr. R.N. Nayak, Dr. Veena Srivastav and Dr. Vikrant Deshmukh, Sharvari Kudtarkar and Deepali Kambale
date: 9th January 2015.

22. List of Lab manuals/SOPs generated for all participating departments

Manual for microscale techniques (Chemistry)

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

Feedback taken by students and non teaching staff members.

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

Enriching Expressions - A lecture series by Alumni

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)

STAR grant has helped us in strengthening the departments in different ways. It has increased the involvement of teachers , students and non teaching staff in the subject.

The funding has helped us to purchase the new equipments in multiples so that the students can do experiments individually.

Application based experiments have created the interest in students minds about the subject. It has also helped the students to interact with each other , with teachers and also with experts invited.

Various workshops organised for teaching and non teaching staff members gave them the insight of the subject.

Students were taken to industrial visits and Institute visits which was possible due to the funding received.

Various new experiments and projects triggered the research interest of the students which will lead to students opting for basic science research as their career.

Students have learnt to work in a team due to projects given to them. Presentation skills, report writing skills, laboratory ethics, handling of instruments have also been improved due to projects.

The scheme has opened the new interdisciplinary avenues to the teachers and students.

26. Suggestions/feedback for improving the scheme

1. Guidelines about grant utilisation and submission of UC/SE and report may be made more clear.

2. Grants should be made available to unaided sections.
 3. Departments like Geology, Mathematics, Statistics, Biotechnology can be included in the scheme.
 4. Non Recurring grant amount can be increased.
 5. Some amount can be allotted for improvement in infrastructure of laboratories , may be on a small scale.
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