

Star-DBT Report

1. Name of the College: K. J. Somaiya College of Science and Commerce, Vidyavihar,
Mumbai-400077

2. Name of Departments Supported:

Name of Coordinator, designation, address, phone nos.

Department	Name of Coordinator	Designation	Address	Phone Number
1. Biotechnology	Dr. Jacintha George	Asst. Prof.	Dept. of Biotechnology, KJSSC, Vidyavihar	9820899406
2. Computer Science	Ms Mousmi Pawar	Asst. Prof.	Department of Computer Science,	7045352056
3. Geology	Mr. Deepak Sahu	Asst. Prof	Dept. of Geology, KJSSC, Vidyavihar	9820625752
4. Mathematics	Ms Sudha Agarwal	Asso. Prof	Dept. of Mathematics, KJSSC, Vidyavihar	9594028333
	Ms Reema Khanna	Asso. Prof	Dept. of Mathematics, KJSSC, Vidyavihar	9322507854
5. Statistics	Mr. Prashant Shah	Asso. Prof	Dept. of Statistics, KJSSC, Vidyavihar	9820209425

3. No. of Regular Faculty with Ph. D. in each participating Department :

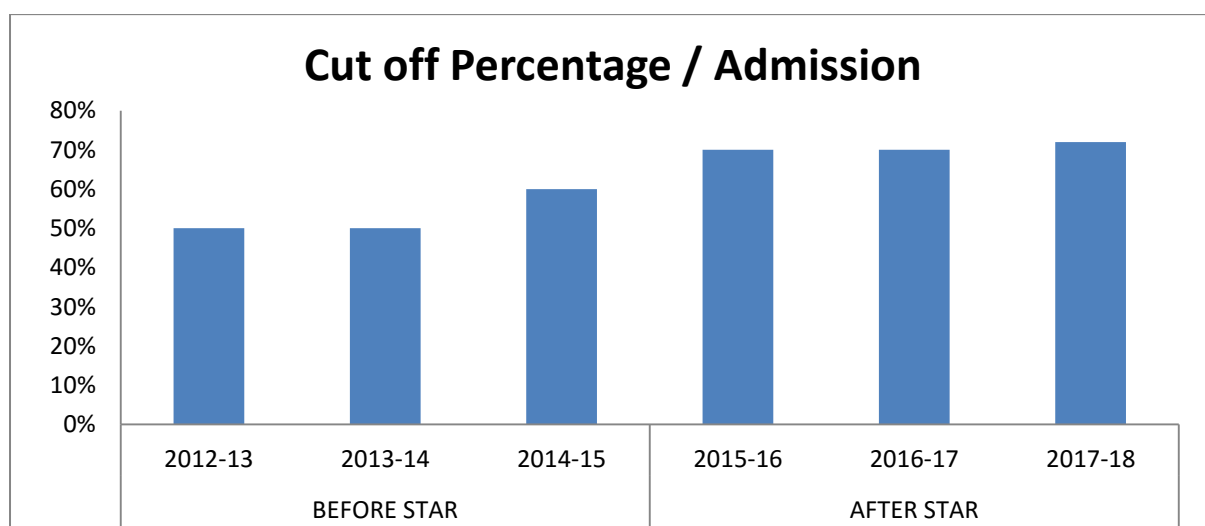
Department	Total No. of regular Faculty	No. of Faculty with Ph.D
1. Biotechnology	07	04
2. Computer Science	02	None
3. Geology	05	02
4. Mathematics	09	None
5. Statistics	04	None

4. List of courses(B.Sc./M.Sc./PG Diploma, certificate etc) run by different participating departments :

Sr. No.	Department	Courses
1.	Biotechnology	B.Sc, M.Sc
2.	Computer Science	B.Sc
3.	Geology	B.Sc, M.Sc
4.	Mathematics	B.Sc,
5.	Statistics	B.Sc

5. Cut off percentage for admission in different courses in participating Departments

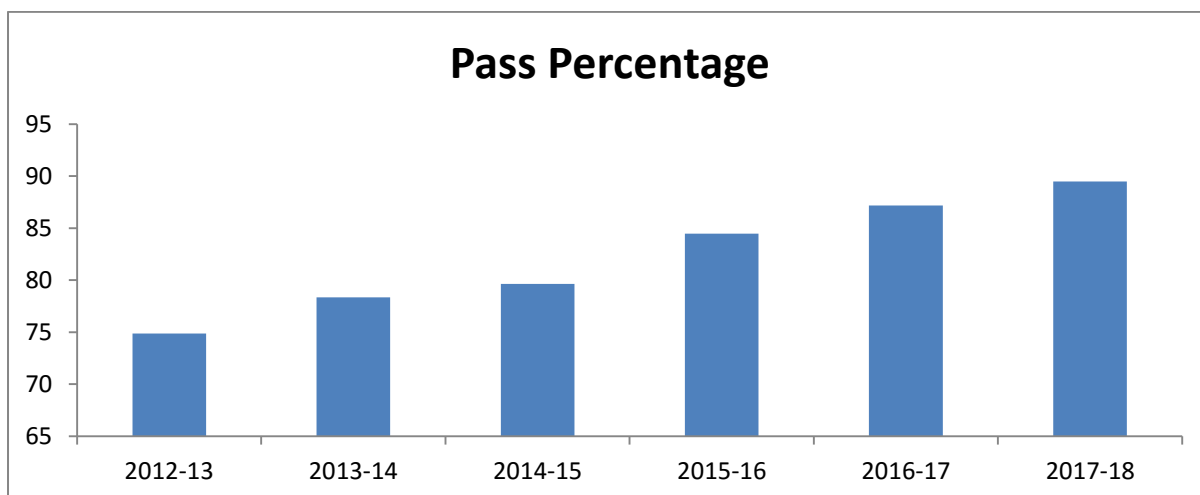
CLASS	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
FYBSC	50%	50%	60%	70%	70 %	72 %



Percentage Results

T.Y.B.Sc result :

Year	Pass Percentage
2012-13	74.87
2013-14	78.35
2014-15	79.63
2015-16	84.48
2016-17	87.17
2017-18	89.47



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

Biotechnology:

Class	Name of Student	Mentor	Title
SYBSc	Artharva Mahajan, Munit Sukla Riya Kadam Karishma Anam Hemali Trivedi Urmi Lakhani Rachna Prasad Bhakti Bhanushali Kashishanmol	Jayesh Bhagat	Zebrafish care and maintenance
SYBSc	Bushra Shaikh, Bhakti Jadhav, Arpi Bhavsar, Urmi Lakhani, Harsheeta Mogaveera,	Amit K Jethwa.	Cultivation of microalgae and cyanobacteria
FYBSc	Richa Shah	Dr. Abhishek Chhaya Mane	Standardisation of Gas Chromatography for estimation of ethanol
SYBSc	Harshita Mogveera	Dr. Jacinta George	Studies on protease isolated from germinating <i>Vigna radiata</i> seeds
SYBSc	Munit Shukla	Dr. Abhishek Chhaya Mane	Production of health soup for supplementation of macronutrients at RDA
SYBSc	Aryan Yadav	Dr. Abhishek Chhaya Mane	Vinification of star fruit and study for scale up at industrial scale
SYBSc	Atharva Mahajan	Jayesh Bhagat	Toxicological studies using Zebra fish

	Bushra Khatoon Khan	Dr. K Z Marolia	Enzyme assay of cellulose obtained from cellulolytic organisms isolated from spoilt food
SYBSc	Kashish Anmol Shaikh	Dr. K Z Marolia	Estimating the burst size of adsorption coefficient of <i>E. coli</i> phage isolated from sewage
SYBSc	Munit Shukla	Dr. K Z Marolia	Isolation of pectinolytic organisms and extraction of pectinase
SYBSc	Yash Sharma	Dr. K Z Marolia	Isolation and enrichment of phage(s) against antibiotic resistant bacteria (Phage therapy)
TYBSc	Padwal Shrutika Singh Shubham Varadkar Samata Tanzil Shaikh	Dr. K Z Marolia	Preparation of Sourdough
TYBSc	17 students	Amit Jethwa Jayesh bhagat Dr. Jacinta George Sagar Shah	RBPT on development of consortium bearing cellulolytic, pectinolytic, lipolytic and amylolytic for organic waste management using composting
TYBSc	Jainam Punjani	Dr. Abhishek Chhaya M	Production of non-specific fungal lipases
TYBSc	Akshita Mirani	Dr. Abhishek Chhaya M	Identification of any correlation between blood groups and diseases (Malaria and Dengue)
TYBSc	2 students	Dr. Abhishek Chhaya M	Health analysis survey of Mumbaikars

Industrial Visits

1	Organizer	Department of biotechnology
2	Date/time of the event:	17 November 2018 to 24 November 2018
3	Type/venue of event:	Industrial visit
5	Teachers in Charge	Dr. K Z Marolia Jayesh Bhagat Dr. Jacinta George Sagar Shah

6	No of beneficiaries	54 undergraduates
7	Brief report of the event	The Department of Biotechnology organised an industrial visit to Ooty-Mysore-Bangalore. The highlights of the trip were the visits to Pasteur Institute, Ooty – leading producers of Anti-Rabies and DPT group of Vaccines in India, BioZEEN, Bangalore – specialises in Fermentation and Upstream Bioproduction technologies and High Field Tea factory, Ooty. Ooty Lake and Botanical Gardens at Ooty, Mysore palace and Brindavan Gardens, Mysore and Visvesvaraya museum, Bangalore. The Visvesvaraya museum offered extensive knowledge on various scientific including biotechnological inventions, concepts and facts with a grand display of ingenious working models, intellectual games and exhibits

Computer Science:

Sr.no.	Project Name	Student Name
	Digitally sense heart rate and body temperature using arduino	Anjali Sukla
2.	BMI Calculator and Nutrition Planner	Arpita Sarang
3.	Accounting Software Program	Labesh Mehta
4.	Language Tutorial	Vidhita Kanoijya
5.	Reverse Car Parking using Sensor	Abhishek Chandan

Workshop / Hands On training attended by students				
Sr. no.	Number of Students (Total: 07 students)	Resource Institute	Title of Workshop	Duration / Date
1	Kushal Ashar	K. J. Somaiya Institute of Engineering & Information Technology, Sion, Mumbai.	Short Term Training Program on Cyber Security in IOT Applications	2th-7th July 2018 (6 Days)
2	Pooja Shewale	K. J. Somaiya Institute of Engineering & Information Technology, Sion, Mumbai	Short Term Training Program on Cyber Security in IOT Applications	2th-7th July 2018 (6 Days)

3	Kajal Rikame,	K. J. Somaiya Institute of Engineering & Information Technology, Sion, Mumbai	Short Term Training Program on Cyber Security in IOT Applications	2th-7th July 2018 (6 Days)
4	Mrunali More	K. J. Somaiya Institute of Engineering & Information Technology, Sion, Mumbai	Short Term Training Program on Cyber Security in IOT Applications	2th-7th July 2018 (6 Days)
5	Nikhila Valunju	K. J. Somaiya Institute of Engineering & Information Technology, Sion, Mumbai	Short Term Training Program on Cyber Security in IOT Applications	2th-7th July 2018 (6 Days)
6	Siddharth Panchal	K. J. Somaiya Institute of Engineering & Information Technology, Sion, Mumbai	Short Term Training Program on Cyber Security in IOT Applications	2th-7th July 2018 (6 Days)
7	Marishwaran Kumarasamy	IIT Bombay	Workshop on Mobile site development with Google certification	16 th – 17 th March 2019 (2 days)

Visit to Gurukul School of Special Children

- 30 students and 3 faculties of our department celebrated Republic Day with special children of Gurukul School
- More than 60 special students participated in the activity.

Intercollegiate Science festival : Binary 2019

No. of Events: 10

Total Participant: 182

Date: 22nd January 2019

Venue: 6th Floor, Bhaskaracharya, Somaiya Vidyavihar

Technical games	Non-technical games
Debug it Blind coding Quiz LAN gaming	Treasure hunt Box-Cricket Fear pong Surgical strike Balloon burst Trust your friends

Geology

Sr. no	Name of the course	Title of the project	Name of the students	Name of the faculty in charge	Beneficiaries
1.	TYBSc	Depositional environment of Cuddapah basin	1. Rohit Samant 2. Mitali Shedge	1. Deepak Sahu 2. Dr. Asmita Singh	2
2.	SYBSc	Undeground Mining Methodology: A study from Munsar Mine, MOIL, Nagpur.	1. Heet Joshi 2. Able Shaji	1. Dr. Jyoti Sharma 2. Siddharth Kshatriya	2

Department Fest: The Geology department of K.J. Somaiya College organized a geological fest named “ONYX” on 7th and 8th December 2018. This fest was organized to make people aware about Geology and to have knowledge about fossils, landform and many other Geological formations. TY Bsc students played a key role in making the preparations of the fest. The fest had exhibition and various games related to Geology on 7th December 2018. Around 70 people walked in for the exhibits and geology related games. The chief Exhibits were “Where on Earth”, “Squash”, “Minute to in It”, “Dice Quake”, “Treasure Hunt”, “PUBG”. As a continuation of the fest a talk on “Ganga through Ages: A pictorial Odyssey” by AVM A.K. Bhattacharyya (Retd.) was also organized.

Industrial visit:

Sr. No.	Class	Field visit	Mines visit	No. of beneficiary
1.	TYBSc	Pre-Cambrian fieldwork at Pulivendula, A.P. for 10 days	1. UCIL Tummalapalle A.P 2. Mangampeta Baryte mine	16
2.	SYBSc	2 days fieldwork of Pre-Cambrian and Gondwana rocks	1. MOIL, Nagpur	25
3.	FYBSc	1 day fieldwork of Mumbai Geology	-	12

Mathematics

Sr no	Names of Students	Class	Project title	Name of the faculty guiding the students
1	Aisha khan Purva mahajan Hasmina laskar Shailesh dwivedi Viraj jagade	S.Y.B.Sc.	Efficient water irrigation planning for rectangular fields	Smt.Sudha Agrawal
2	Preeti Gupta Aditi Jadhav Snehal Kokare Ann breeze J Kulsum Momin Pradnya More	S.Y.B.Sc.	Meeting point	Smt.Sudha Agrawal
3	Rutuja dinde Nishtha Mehta Manasi ghadshi Viraj jain. Rutuja khadawle	S.Y.B.Sc.	Travelling sales problem(to find the minimum cost)	Smt.Sudha Agrawal
4	Amra Momin Pooja Joshi Shruti Jadhav Drashti Gada Dhanashree Ghadge	S.Y.B.Sc.	Don't be delusional about diabetes	Smt.Sudha Agrawal
5	Suraj goundar Darshit gudhka Rohit mourya	S.Y.B.Sc.	Formation of ripples	Smt.Sudha Agrawal
6	Mayuresh Mahajan Pravin Hadawale	S.Y.B.Sc.	Application of Differentiation(To find Maximum profit)	Smt.Sudha Agrawal
7	Ravishankar yadav Vinit yadav afzal Khan mahipal singh shubham Sharma	S.Y.B.Sc.	Uses of quadratic equations mathematical modelling (path of projectile)	Shri Makarand Niphadkar
8	Mega Pasalkar Sangeeta Tungariya Komal Suryavanshi Shaeesta Shaikh Rehana Banu Shaikh	S.Y.B.Sc.	Mathematics in plants	Shri Makarand Niphadkar
9	Sarvesh Tape Kundan Thakur Shivam Thakur	S.Y.B.Sc.	Gauss Jordan Elimination to find polynomial function to a set of data points and also to Kirchoff law	Shri Makarand Niphadkar

10	Shabana Shaikh Varsha murgan Aishwarya Borkar Swarashree pawar Kunal prajapati Arbaz Shaikh	S.Y.B.Sc.	Shortest path from Chembur to Ghatkopar	Shri Makarand Niphadkar
11	Vikas Rajpurohit Bhavesh Ram Hamza Dalal Tejas Dalvi	S.Y.B.Sc.	Applications of Linear Equations	Shri Makarand Niphadkar
12	Mahadev mestry Sarvesh sawant Pranav dhuri Viraj Pawar Manish Parulekar	S.Y.B.Sc.	Application of matrices	Shri Prashant Agre
13	Bhagyalaxmi Maharana Prithvi Patil Shreya Shinde	S.Y.B.Sc.	Matching the marriage problem	Shri Prashant Agre
14	Prachi Thakkar Roshini S Moumita Paroi Chanda Pandey Om Ruparel	S.Y.B.Sc.	RSA Encryption	Shri Prashant Agre
15	Durgesh Singh Ketan Pawar Pawan Kumar Yadav	S.Y.B.Sc.	Application of Graph theory	Shri Prashant Agre
16	Vaibhav sathe Simeen pawaskar Samrin sheikh Santoshi katke Ankur Tripathi	S.Y.B.Sc.	Mathematics in Daily life	Shri Prashant Agre
17	Sahil M. Bhagwat Pranay S. Chorge Rohan S. Ingawale Ajeet K. Jaiswar	S.Y.B.Sc.	Matrices and application of matrices	Smt. Reema Khanna
18	Faizan Ansari Vikas Bornak Rahul Das Nikhil Dhyani Chris Nair	S.Y.B.Sc.	"e" ka hai?(applications in quantum mechanics)	Smt. Reema Khanna
19	Akash kasturiya Shruti bansode siddhesh naik samiksha jadhav Miss. Sunita gupta	S.Y.B.Sc.	Life of Pi	Smt. Reema Khanna

20	Haritha Nair Sreelaxmi Nair Arifa Khan Anam Shaikh Divya Paradkar	S.Y.B.Sc.	An inconvenient truth(beating pollution through Mathematics)	Smt. Reema Khanna
21	Asmita Kamble Atharva Darbhe Rohan Kadam Arpan Datta	S.Y.B.Sc.	Bank robbery gone wrong	Smt. Reema Khanna
22	Saurabh mane komal banker ishrat Chaudhary siddhita dalvi pratik dave	S.Y.B.Sc.	Financial Mathematics.	Smt. Reema Khanna
23	Mansi Palekar	T.Y.B.Sc.	Mathematics in Astronomy	Shri Subhash Krishnan
24	Ankit Mishra	T.Y.B.Sc.	Mathematics in Architecture	Shri Subhash Krishnan
25	Sagar Gala	T.Y.B.Sc.	Mathematics in sports	Shri Subhash Krishnan
26	Triveni Turbhekar	T.Y.B.Sc.	Mathematics in Culinary Science	Shri Subhash Krishnan
27	Nisha Mange	T.Y.B.Sc.	Mathematics in music	Shri Subhash Krishnan
28	Arti Khatri	T.Y.B.Sc.	Mathematics in Medicine	Shri Subhash Krishnan
29	Santosh Misal	T.Y.B.Sc.	Mathematics and oigami	Shri Subhash Krishnan
30	Himanshu Kulkarni	T.Y.B.Sc.	Mathematics in epidemic	Shri Subhash Krishnan
31	Ankita Pawar	T.Y.B.Sc.	Mathematics in nature	Shri Subhash Krishnan
32	Ankita Wagh	T.Y.B.Sc.	Mathematics in Business	Shri Subhash Krishnan
33	Zahid Shaikh	T.Y.B.Sc.	Mathematics in crime	Shri Subhash Krishnan
34	Najma Shaikh	T.Y.B.Sc.	Similarity of triangles in real life situation	Shri Subhash Krishnan
35	Simrin Khan	T.Y.B.Sc.	Mathematics in crime....atm cards	Shri Subhash Krishnan
36	Nazmeen Khan	T.Y.B.Sc.	Mathematics in Nature..the honeycomb conjecture	Shri Subhash Krishnan
37	Rashida Chaudhary	T.Y.B.Sc.	Vedic Mathematics	Shri Subhash Krishnan

Statistics

Industrial/Field visit (Anand Agriculture University):

The department of Statistics had organised an Industrial Visit to Anand Agriculture University, Anand, Gujarat under the 'STAR DBT' scheme. A batch of 14 T.Y.B.Sc. students and 9 M.Sc.(part 1) students accompanied by 2 staff members visited the University. The journey started with a halt at the Amul Factory outlet. The students were informed about how Statistics is applied in the agricultural field and the use of computer software and its importance. Professor, Dr.P.R.Vaishnav explained the various aspects and designs like RBD, Split Plot etc. that are applied in the field for different experiments. Students were also taken to the weather Station where they were shown machines like Anemometer (calculate wind velocity) , Pin wheels (wind direction), Automatic weather Station (AWS) and some more machines that calculate humidity , sun pattern , temperature underground at different depths etc. and how readings were taken on different parameters.

Student's participation:

Seven students (S.Y.B.Sc. and T.Y.B.Sc.) participated in Two-day event "Sankhyiki 2019" organized by Sunandan Divatia School of Science (NMIMS University)

Intercollegiate department Fest: Sankhyastra (सं ख्यास्त्र):

Like every year, students of T.Y.B.Sc.(Statistics) along with M.Sc.(Statistics), F.Y.B.Sc.(PMS)and S.Y.B.Sc. (Maths-Stats) organized an intercollegiate fest- "SANKHYASHASTRA 2018-19" under the 'STAR DBT' grant which was held in college's Seminar Hall. Around 40 students from various colleges of Mumbai had participated for this event. In included STAT-O-MANIA, which involved presentations by students. The program had many other events like CRIC-STATS, BRAIN FREEZE, BET-A-BETA, SURVIVAL OF FITTEST along with other fun games like Pictionary, DART GAME ETC.

7. Training received by faculty from participating department

Biotechnology:

Training	Date	Name of the faculty
Participated in ' Integrating bioinformatics in undergraduate biological sciences' workshop at Xaviers college	27, 28 29 September 2018	Mr. Jayesh Bhagat
Participated in LTMT workshop on Experimental Approach for Drug Studies at Sophia College	17 th – 19 th January 2019	Mr.Jayesh Bhagat

Computer Science:

Sr. no.	Number of Faculty (Total: 03 faculty)	Resource Institute	Title of Workshop	Duration / Date
1	Kirti Amberkar	Department of Computer Science, University of Mumbai, Santacruz, Mumbai	Revised Syllabus of B.Sc. Computer Science Semester V and VI	16 th July 2018, 1 day
2	Anushree Sukhi	K.J. Somaiya College of Engineering, Mumbai	Moodle for teachers and system admin	15 th March 2019 1 day
3	Mousmi Pawar	K.J. Somaiya Centre of Buddhist Studies	Diploma in Foundation of Yoga	1 Year 2018-2019

Geology:

Sr. No.	Training	Faculty
1.	1 week workshop on field training at Chitradurga, Karnataka	Mr. Deepak Sahu
2.	1 week workshop on Geospatial Data Management at VJTI, Mumbai, Maharashtra	Mr. Deepak Sahu

Mathematics:

Smt.Reema Khanna attended the inaugural Conference conducted by mathematical Association of Teachers

Statistics:

- Ms. Namrata Nagwekar along with two T.Y.B.Sc. students Ms. Deesha Dedhia and Ms. Poonam Suryavanshi attended National Conference on Clinical Trials at Ahmedabad.
- Ms. Namrata Nagwekar attended National Level Seminar on Role of Statistics in Clinical Trials at SIES College.
- Mr. Prashant Shah attended one-day workshop on MOODLE training organized by IIT Bombay on 15th March 2019
- Mr. Prashant Shah attended one-day workshop on LaTeX workshop (K.C. College) on 25th March 2019
- Ms. Aarati Hakim attended two-day workshop on SPSS organized by Department of Statistics, University of Mumbai on 22nd and 23rd March 2019.

8. List of exhibition/seminars/training courses conducted by college.

Biotechnology:

1	Organizer	Department of Biotechnology
2	Date/time of the event:	9 th and 10 th of July 2018; 8.00 hrs to 18.00hrs
3	Type/venue of event:	Flipped classroom learning- PowerPoint presentations by students Seminar hall
4	Topic of the event	BIOZONE
5	Resource persons	Staff of biotechnology department
6	No of beneficiary	65students & staff of biotechnology department
7	Brief report of the event	'Biozone' is an initiative by the Department of Biotechnology towards inculcating and reviving the thirst for Biotechnology in the students. The activity involves a series of power-point presentations by the students themselves (S.Y.B.Sc. and T.Y.B.Sc. students) on related biological topics.

Organizer	Department of Biotechnology in collaboration with the Interdisciplinary department in Education Technology, IIT Bombay
Date/time of the event:	21 st February, 2019
Type/venue of event:	Seminar hall & IT Laboratory facilities
Topic of the event	Pedagogy in Genetics-Genticus Investigatio
Resource persons	Dr. Sahana Murthy, IIT, Bombay Mr. Anurag Deep from IIT, Bombay Staff of biotechnology department
No of beneficiary	12 staff of colleges from Mumbai
Brief report of the event	Dr. Sahana Murthy deliberated on active learning and how classes could be made more interactive. Following this, Mr. Anurag Deep from IIT, Bombay conducted hands on session on the use of his newly developed tool- Genticus Investigatio. The tool, involves the use of basic Mendelian genetics to solve problems by the student. This teaching aid would help in analytical thinking wrt Mendelian genetics. Teacher were able to experience the teaching methodology and would now be able to use this tool to improve the learning experience of the student

Organizer	Department of Biotechnology
Date/time of the event:	25 th January, 2019
Type/venue of event:	Seminar hall & department
Topic of the	departmental fest: CRISPRalis -ECLORE POTENTIAL

event	
Resource persons	Staff of the Department of Biotechnology
No of beneficiary	Over (200) hundred students from 14 different colleges participated
Brief report of the event	A total of five events were planned for the day. The preliminary and final rounds of the events were scheduled to implement throughout the day without any clashes. Revelio Imperio : Crime scene based event Mind Martians Lab Rats Impromptu Infinity Hunt

Computer Science:

Name of the institute/industry/Resource Person	Title of the Workshop	Duration / Date	No.of beneficiaries
Ms Kirti Amberkar, Ms Mousmi Pawar Mr. Prashant Shah Ms. Arati Kore Ms. Asha Jindal (HOD, Statistics Department, K.C. College, Churchgate.)	Introduction to Python programming and R-tool for statistical computing	10 th and 11 th August 2018, 2 days	42
Mr. Arunjit Chowdhary, EBTS	Machine Learning with python	8 th Feb 2019, 1 day	43
Build My Project	Workshop on I-Senso Robotics	11 th and 12 th Feb 2019, 2 days	48
Ms. Purnima ahirao KJSCE Ms. Deepti Patole, KJSCE	Digital Forensics	1 st March 2019, 1 day	26

Geology:

Activity	No. of beneficiaries
Two days (15 th and 18 th Feb 2019) exhibition of Geology Museum specimens for 6 th grade of the Somaiya School students was organized.	120
One day workshop on 5 th Feb 2019, on Pathway to Industry with Geo-informatics and Spatial Analytics was conducted for all undergraduate students.	55
One day seminar on career opportunity in geology was organized on 11 th Aug 2018.	90+ parents

Mathematics:

Name of the workshop	Dates	Organised by	Number of beneficiaries
Foundations in Mathematics	1 st to 10 th June,2018	Bhaskaracharya Pratishtana, Pune	3
IIT JAM Sessions	15 th to 18 th November,2018	K.J.Somaiya College of Science and Commerce	10
Complex Analysis	28 th to 30 th November,2018	K.J.Somaiya College of Science and Commerce	46(31 students from 3 other colleges)
MINI MTTTS programme	26 th November to 1 st December,2018	NES Ratnam College of Arts,Science & Commerce	2

Statistics:

Name	Designation	Host institute	Duration of visit	Topic of discussion	Beneficiary
Statistics Dept.: Mr. Prashant Shah, Ms. Arati Kore Computer Science Dept: Miss Kirti Ambekar, Miss Moushmi Pawar Statistics Department, K.C. College, Churchgate: Ms. Asha Jindal (HOD)	Teaching faculties from various departments.	Department of Statistics and Department of computer Science K. J. Somaiya college of science and Commerce	10 th and 11 th August 2018	Two-day workshop on "Introduction to Python programming and R-tool for statistical computing"	42
Mr. Vishal Samant	Predictive Analytics Solutions Pvt. Ltd. Bangalore	Department of Statistics K. J. Somaiya college of science and Commerce	12 th , 13 th Dec, 2018	Two-day workshop on "Data analysis in R using STATCRAFT"	45

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

Name	Designation	Institute/Industry	Date	Topic of discussion	Number of Students
Mr. Siddhesh Patel	Director	Adenhanseo	18 th January 2019	Digital Marketing	78
Dr. Sanjay Joshi	Founder, Director	Enviro-Vigil	23 rd January 2019	Green Computing	84
Ms. Hetal Mudra	Community Architect	Riidl	24 th , 25 th and 28 th January 2019	Ideation and Innovation	130

Geology:

Sr. No.	Topic	Name of the resource person	No. of beneficiary
1.	Ganga through ages-A pictorial Odyssey	A.K Bhattacharyya Air Vice Marshall, RETD.	80 + teachers
2.	Climate change with Indian and global context and evolution of Life Form	Dr. Jere Lipps Professor of Graduate School, University of California, Berkeley	90+ teachers

Mathematics:

Name of the speaker	Designation	Company/ Institute	Date of the talk	Title of the talk	Number of beneficiaries
Dr. Rajendra Deodhar	Senior Scientist	DRDO, Pune	21 st July 2018	Applicable Mathematics: Soft Computing techniques	134
Mohammad Raish N. Sayyed	Consultant	Capgemini, India Pvt. Ltd.	4 th August,201 8	Machine Learning and Mathematics	55
Mr. Sripad Kulkarni	Senior Executive	Data Science, Nielsen, India	11 th August,201 8	Scope of Mathematics	194
Dr, Parvathi .R	Associate Professor and Head Department of Mathematics	Vellalar College for Women (Autonomous) Erode – 638 012	9 th March,2019	Applications of Mathematics in other Sciences.	25

Statistics

Name	Designation	Host institute	Duration of visit	Topic of discussion	No.of Beneficiaries
Mr. Umesh Lenka	Manager Supermax Company, Thane	Department of Statistics K. J. Somaiya college of science and Commerce	23 rd February 2019	Invited lecture on “Statistical Quality control”.	80
Mr.Nipun Mapara	Senior Manager, Knowledge Services- Willis Tower Watson	Department of Statistics K. J. Somaiya college of science and Commerce	29th June 2018 (National Statistics Day)	Catastrophe modeling, strategies behind evaluating insurance and reinsurance, risk management, development of different types of models ranging from earthquakes to terrorism were explained with a lot of simplicity.	83

10. Date of Advisory Committee meeting : 5th December 2018

11. List of Practical/demonstration introduced in different departments in last one year

Computer Science:

- 1) Computer Organization and Design
 - Displaying LED light on bread board
- 2) Algorithm and Programming in C
 - Memory Allocation
 - Arrays within structures
 - Jump Statement: Break and Continue

Mathematics:

- Newton's law of cooling.
- Tower of Hanoi
- Frogs Game
- Finding the sum of the kth power of natural numbers using interpolation.

12. Details of equipment are purchased in each department from DBT grant

Biochemistry

Sr. No	Date & Bill No. of purchase of equipment	Name of Equipment	Item Wise Cost	Total of Bill Amount
1	MUM/I NV/181 9/341 Dated 25.10.2018	Monocular Microscope	1,60,000/-	
2		Objective 100X	32,000/-	
3		Trinacular Stereozoom icroscope	65,000/-	
4		Trinacular Microscope	65,000/-	
5		Dissecting Microscope	6,500/-	
6		Digital Camera	45,000/-	
7		Trinacular Head For Microscope	15,000/-	
		Less: Discount	(27,195/-)	
		Add: CGST Payable	32,517.45/-	
		Add: SGST Payable	32,517.45/-	
		Less: R/off	0.10	4,26,340/-
1		DNT/18 - 19/10/G I-117 dated 25.10.2018	Power Supply For Electrophoresis	33,902/-
2	Remi Cyclomixture		7,176/-	
3	Uv-Visible Spectrophotometer		77,740/-	
4	Visible Spectrophotometer		73,600/-	
5	Laboratory Centrifuge		57,040/-	
6	Swing Out rotor		12,696/-	
7	Reduction Adaptor Ra-160F		552/-	
8	Reduction Adaptor Ra-161F		552/-	
9	Metal Buckets B-100		15,088/-	
10	Metal Buckets B-95		7,268/-	
11	Angle Roter For Tubes		4,002/-	
12	Angle Heads Roter For Centrifuge		15,180/-	
13	Rotary Evaporator		66,700/-	
14	Flask For Rotary Evaporator		3,634/-	
15	Vacuum Pump		20,194/-	
16	Glass Bottle Track For Pump		1,978/-	
17	Chiller		64,860/-	
18	Laboratory Incubators		21,620/-	
	Add: CGST Payable	43,540.40/-		
	Add: SGST Payable	43,540.40/-	5,70,863/-	
		Department Total		9,97,203/-

Geology

Sr. No	Date & Bill No. of purchase of equipment	Name of Equipment	Item Wise Cost	Total of Bill Amount	Remarks (if any)
1	HOB/20914 dated 24.09.2018	CMOS Camera	1,35,000/-		
2		Polarizing Microscope	4,10,400/-		
3		Less: Discount	38,178/-		
		Add: CGST Payable	45,650/-		
		Add: SGST Payable	45,650/-		5,98,522/-
1	419/1/-2019 dated 11.10.2018	Brunton Compass	27,500/-		
2		Rock Hammer	27,075/-		
3		Crack Hammer	17,670/-		
4		Safety Eyewear	1,250/-		
5		Pocket Lens	2,150/-		
6		Field Soil Testing Kit	6,175/-		
7		Field Water Testing Kit	17,575/-		
8		Mortar And Pestle	9,000/-		
9		Goniometer	2,600/-		
10		Digital Balance	40,000/-		
11		PH Meter	2,700/-		
12		Global Positioning System	40,800/-		
13		Digital Thermometer	900/-		
14		Diamond Mortar And Pestle	3,600/-		
15		Sieve Shaking Machine	36,575/-		
16		Rock Cutting Machine	98,000/-		
17		Conductivity Meter	9,000/-		
		IGST Payable	61662.60		
		Less: R/off	-0.60		
		Department Total		10,02,754/-	

Computer Science

Sr. No	Date & Bill No. of purchase of equipment	Name of Equipment	Item Wise Cost	Total of Bill Amount
1	144 dated 06.12.2018	Assembled Raspberry Kit	33,000/-	
2		8085 Microprocessor Kit	55,000/-	
3		Arduino Kit	2,250/-	
4		Loose Raspberry Kit	68,250/-	
		Add: CGST Payable	14,265/-	
		Add: SGST Payable	14,265/-	1,87,030/-
1	450769 dated 21.09.2018	Tablet	58,900/-	
		Add: CGST Payable	5,301/-	
		Add: SGST Payable	5,301/-	69,502/-
1	GSTOSG18192 839 Dated 06.10.2018	Lenovo M720T /Desktop	6,35,850.15/-	
		Add: CGST Payable	57,226.51/-	
		Add: SGST Payable	57,226.51/-	
		Less: R/off	-0.17	7,50,303/-
		Department Total		10,06,835/-

Mathematics & Statistics (Rs 10 Lakh Each Dept.)

Sr. No	Date & Bill No. of purchase of equipment	Name of Equipment	Item Wise Cost	Total of Bill Amount
1	C/18-19/0797 Dated 14.09.2018	Graphic	2,22,457.50/-	
2		Scientific Calculators	15,170/-	
		Add: CGST Payable	21,386.48/-	
		Add: SGST Payable	21,386.48/-	
		Less: R/off	-0.46	2,80,400/-
	GSTOSG18192465 Dated 08.09.2018	Lenovo M720T /Desktop	12,35,910.39/-	
		Add: CGST Payable	1,11,231.94/-	
		Add: SGST Payable	1,11,231.94/-	
		Less: R/off	-0.27	14,58,374/-
1	266 dated 17.12.2018	Lenovo M720T /Desktop	2,59,000/-	
		Add: CGST Payable	23,310/-	
		Add: SGST Payable	23,310/-	
		Less: R/off	0	3,05,620/-
		Department Total		20,44,394/-

13. Details of books & journals subscribed from DBT grant

Geology:

Sr no.	Title of the book
1.	Groundwater hydrology, Todd
2.	Economic Mineral Deposits, Bateman
3.	Manual to Mineral Science, Hulbert and Klien
4.	Climatology, D.S. Lal (2)
5.	Remote Sensing and Image Interpretation, Lilies and Kiefer
6.	Principles of Engineering Geology, Kryne and Jude
7.	Mining Geology, Arogya Swami
8.	Principles of Sedimentology and Stratigraphy, Sam Boggs
9.	Sedimentary rocks, Pettijohn
10.	Sedimentary Petrology, Tucker
11.	Geomorphology, Arthur Bloom
12.	Geology Mapping, Gokhale
13.	Introduction to Igneous and Metamorphic Petrology, J.D. Winter
14.	Petrology, Tyrell
15.	Coal and Organic Petrology, Dr. M.P. Singh
16.	Global Tectonics, Keary and Vine
17.	Structural Geology, Hakkon Fossen
18.	Principles of Igneous and Metamorphic Petrology, M.G. Best
19.	Geophysics, Lowrie
20.	Geodynamic Evolution of India, Valdiya
21.	Geophysics, Fowler
22.	Geomorphology, Anderson and Anderson
23.	Indian Stratigraphy, Ravindra Kumar (2)
24.	Principles of Petrology of Igneous and Metamorphic rocks, Phillpots
25.	Economic Geology, Umeshwar Prasad (2)
26.	The complete Ency. Of minerals, Korbel
27.	Global regional linkage in the Earth system, Tyson
28.	World Atlas of Oil and Gas basins, Guoyu
29.	Landmark papers in Metamorphic Petrology, Evans
30.	Accounting for climatic change - Lieberman
31.	Frontiers in Geofluids – Yardley
32.	Remote Sensing tools for Exploration, Clark
33.	Geochemical Kinetics, Zhang
34.	Encyclopaedia of soil science, Chestworth
35.	Air pollution and Climate change in south asia, Helshresha –
36.	Hydrology and Water Resource, Pai `
37.	Physical Geography, Dev
38.	Climate change and sustainable development, Pacharvi
39.	Granite landscape of the world, Migon
40.	Geophysical monograph series no.7 for seismic data acquisition and Exploration, Evans

Mathematics:

Sr.No.	Title of the book
1	Algebra for Applications Slinko, A. (2015)
2	Basic Linear Algebra Blyth, T.S. (et al.) (2002)
3	Groups, Rings and Fields Wallace, D.A.R. (1998)
4	Inequalities Cvetkovski, Z. (2012)
5	Integers, Polynomials, and Rings Irving,
6	Lattice Theory: Special Topics and Applications Grätzer, G. (et al.) (Eds.) (2016)
7	The Linear Algebra a Beginning Graduate Student Ought to Know Golan, J.S. (2012)
8	Linear Algebraic Groups Springer, T.A. (1998)
9	Advanced Calculus of a Single Variable Geveci, T. (2016)
10	Analysis Penot, J.-P. (2016)
11	Analytic Function Theory of Several variables Noguchi, J. (2016)
12	A Course in Calculus and Real Analysis Ghorpade, S.R. (et al.) (2006)
13	A Course in Multivariable Calculus and Analysis Ghorpade, S.R. (et al.) (2010)
14	Differential Equations and Dynamical Systems Perko, L. (2001)
15	Introduction to Calculus and Analysis II/1 Courant, R. (et al.) (2000)
16	Introduction to Calculus and Analysis II/2 Courant, R. (et al.) (2000)
17	Introduction to Calculus and Classical Analysis Hijab, O. (2016)
18	Linear Partial Differential Equations for Scientists and Engineers Myint-U, T. (et al.) (2007)
19	Methods of Fourier Analysis and Approximation Theory Ruzhansky, M.V. (et al.) (Eds.) (2016)
20	Metric Spaces O'Searcoid, M. (2007)
21	Writing Proofs in Analysis / Kane, J.M. (2016)
22	A Textbook on Ordinary Differential Equations Ahmad, S. (et al.) (2015)
23	University of Toronto Mathematics Competition (2001–2015) Barbeau, E.J. (2016)
24	Partial Differential Equations , Emmanuete
25	Mathematical Logic, Kleene
26	Calculus, Honorr
27	Mathematical Aptitude, Tulsiani
28	29.Discrete Mathematics, Singh
29	30.Algebra 1, Shankar
30	Discrete Mathematcis , Yadav
31	32.Reasoning with numbers, Baradon
32	33.College Algebra,Aufmann
33	Mathematics 1, Khan
34	35.Vedic Mathematics, Junadaru
35	36.Combinatorics, Krishnamurthi
36	37.Mathematical Physics, Balakrishnan
37	38.Fields, flows and waves, Parker
38	39.Applied Mathematics 1, Parker
39	40.Calculus, Smith

40	41.Elements of Graph Theory, Yadav
41	42.Linear Algebra, Rana
42	43.Calculus of one Variable, Nair
43	Complex Analysis, Gupta
44	Calculus, Singh
45	Maximum Principles and Geometric Applications Alías, L.J. (et al.) (2016)
46	Optimal Transport Villani, C. (2009)
47	48. Topics in Banach Space Theory Albiac, F. (et al.) (2016)
48	49. Undergraduate Analysis Lang, S. (1997)
49	Cryptography: theory and practice by Douglas Robert Stinson
50	CRC Press,
51	A Course in Number Theory and Cryptography Neal Koblitz
52	Springer Science & Business Media
53	A Course in Functional Analysis
54	Game Theory for Security and Risk Management
55	Mathematical and Statistical Applications in Life Sciences and Engineering
56	Numerical Methods for Partial Differential Equations
57	Solving PDEs in Python
58	Adventures in Graph Theory
59	Algebraic Combinatorics
60	Combinatorial Matrix Theory
61	Graphs and Applications
62	A Primer for Undergraduate Research
63	Problem-Solving Methods in Combinatorics
64	Sequences, Groups, and Number Theory
65	A Mathematical Approach to Protein Biophysics
66	Mathematical Foundations of Neuroscience
67	An Introduction to Diophantine Equations
68	Integer Programming
69	Algebra Lang, S. (2002)
70	Linear Algebra Nair, M.T. (2018)
71	Numerical Linear Algebra Bornemann, F. (2018)
72	Advanced linear Algebra/Roman/Springer
73	Algebra/ Gelfand/Springer
74	Applied Linear Algebra/Olver/ Springer
75	Applied Linear Algebra and Matrix Analysis /Shores/Springer
76	A Course in Be- Algebras/ Mukkamala//Springer
77	Geometric Group Theory/Loh/Springer
78	Groups, matrices and vector spaces/ Carell/Springer
79	Complex Analysis and Dynamical Systems/ Agranovsky/Springer
80	Indefinite inner product spaces , Schur Analysis and Differential Equations /Alpay/Springer
81	Methods for Partial differential equations/Ebert/Springer
82	Methods of solving sequence and series problems/Grogorieva/Springer
83	Modern Real Analysis/Ziemer/Springer
84	Multivariable Calculus with applications /Lax/Springer

85	External Combinatorics/Jukna/Springer
86	Introduction to Algebra/Cameron/ OUP UK
87	Applied Combinatorics/Tucker/Wiley India
88	Principles and Techniques in Combinatorics /Koh/WSP
89	Abstract Algebra/ Dummit/ Wiley India
90	Contemporary Abstract Algebra/Gallian/ Cengage
91	Mathematical Biology Murray, J.D. (2002)
92	Mathematical Modelling Heiliö, M. (et al.) (2016)
93	A First Course in Discrete Mathematics Anderson, I. (2002)
94	A Path to Combinatorics for Undergraduates Andreescu, T. (et al.) (2004)
95	Essential Mathematical Biology Britton, N. (2003)
96	Introduction to Mathematical Biology Chou, C.S. (et al.) (2016)
97	Mathematical Models and Methods for Living Systems Ciarletta, P. (et al.) (2016)
98	Mathematics in Everyday Life Haigh, J. (2016)
99	An Introduction to Mathematical Cryptography Hoffstein, J. (et al.) (2008)
100	Mathematical Statistics for Economics and Business Mittelhammer, R.C. (2013)

Statistics

Sr. No.	Book Name
1	Numerical & statistical Techniques
2	Probability and Numerical Methods
3	Introduction to Matrix theory
4	Multivariate Probability
5	Statistics for Business and Economics
6	Statistical Methods
7	Schaum's outlines STATISTICS
8	Schaum's outlines Introduction to Probability and Statistics
9	Econometrics
10	Research Methodology Methods and Techniques
11	Theory of Econometrics
12	Biostatistical Analysis
13	EXCEL Statistics A Quick guide
14	Applied stochastic processes
15	Statistics The Exploration and analysis of data
16	Statistics for Behavioral Sciences
17	Applied Regression modeling
18	Statistics for Business and Economics
19	Applied Business statistics
20	Design and Analysis
21	Fundamentals of clinical trials
22	Game theory & its application
23	Design and Analysis of experiments
24	Introduction to statistical inference
25	An introduction to probability and stochastics process

14. Qualitative improvements due to DBT support

Please highlight (5 salient lines)

- Several faculty were already trained in flipped class pedagogy and they were implementing it in the classroom sessions too. However due to STAR-DBT grant we could enhance the implementation of this effective pedagogy due to purchase of CYBERNETIX boards which allows for more active involvement between the faculty and the students.
- The STAR-DBT grant allowed us to envisage new experiments in several subjects at different levels and it allowed us enrichment of our curriculum and added value to our autonomous status. Duplication of routine experiments has brought about robustness in the departmental experimental planning.
- Research based Pedagogy tools, Project based learning and Problem based learning could be initiated at all levels (F.Y.B.Sc, S.Y.B.Sc and T.Y.B.Sc) due to the availability of STAR-DBT grant. It honed the research aptitude of the undergraduate students. Student numbers opting for projects has increased and the time they spend in the department after class has given them a great sense of happiness and power to discuss and analyses. It has enabled the department to execute projects with perceivable results for the students.
- The STAR-DBT grant allowed us to encourage and motivate undergraduate students to attend and present their projects in the form of posters and oral presentations in several Local, State, National and International conferences and Research conventions.
- Geology is offered as a subject only by two colleges in Mumbai one of which is ours. As a result of the STAR-DBT grant sanctioned to the department of Geology we could equip the department with several field instruments, pocket lens magnifier rock cutting machine, sieve shaker, specific gravity balance, pH meter and water analysis kit.
Five TYBSc students could clear IIT JAM as a result of the petrography practicals and better learning from field visits which were enhanced due to STAR DBT grant.

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

- Timely Release of funds
- Difficulties in Entries in PFMS portal
- Inclusion of Laptops, Printers, LCD Projector as teaching aids and Small equipments under Recurring grants
