



Kristu Jayanti College

AUTONOMOUS

Bengaluru

Reaccredited A++ Grade by NAAC | Affiliated to Bengaluru North University

STRENGTHENING COMPONENT OF DBT STAR COLLEGE SCHEME

COMPLETION REPORT (29-02-2020 to 30-11-2023)

Submitted to



**DEPARTMENT OF BIOTECHNOLOGY
MINISTRY OF SCIENCE AND TECHNOLOGY
GOVERNMENT OF INDIA**

Submitted by:

Kristu Jayanti College, Autonomous

K. Narayanapura, Kothanur P.O., Bengaluru-560 077, Karnataka, India.

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Completion Report
29/02/2020-30/11/2023

Department of Biotechnology
Proforma for submission of Completion Report supported under Star College Scheme

1. Name of the College: Kristu Jayanti College (Autonomous), Bengaluru

2. Name of Coordinator, designation, Address, Phone nos.:

Dr. Dileep Francis
Assistant Professor
Department of Life Sciences
Kristu Jayanti College (Autonomous) Bengaluru, Karnataka- 560077

Email: dileep@kristujayanti.com
Phone: +91 9605603260, +9 19847609079

3. (A) Assessment duration: 29 / 02 / 2020 to 30 / 11 / 2023 **(B) Duration in years:** 3.9

(C) Extension Period if any: 01/ 03/ 2023 to 30/ 11/ 2023

4. Details of Departments Supported:

Sl No	Name of Department	Courses offered	Regular Faculty Members	
1	Department of Life Sciences	1. BSc Biotechnology, Biochemistry, Genetics (BBG) 2. BSc Microbiology, Biochemistry, Genetics (MBG) 3. BSc Botany, Biotechnology, Biochemistry (BBB) 4. MSc Biotechnology 5. MSc Microbiology 6. MSc Biochemistry (Introduced in 2020-21 academic year)	Total = 37	
			With PhD	Without PhD
			35	02

5. Number & Date of Advisory committee meeting:

Sl. No	Date
1.	12/11/2020



6. Qualitative improvements due to DBT support:

i. *Revision of Practical Curriculum:*

In line with the objectives of the Star College Scheme, the practical curricula for UG programmes (Biotechnology, Microbiology, Biochemistry, and Genetics) under the Department of Life Sciences were revised. Topics in the theoretical curriculum that lacked practical components were identified, and new experiments were introduced. Redundancies in the curricula were eliminated. After approval from the respective board of studies members, the revisions were officially incorporated into the curriculum. Additionally, practical components that were previously conducted as demonstrations or explained theoretically were converted into hands-on experiments. In summary, the implementation of the DBT Star Scheme led to both qualitative and quantitative improvements in the practical curricula.

ii. *Fortification of Laboratory Infrastructure & Resource Mobilization:*

Equipment and consumables needed for the newly proposed experiments, as well as those converted to hands-on mode, were procured using the grant provided under the Star College Scheme. Additionally, more learning resources were made available to students through the acquisition of new books and journals for the library.

iii. *Preparation of Laboratory manuals:*

Before the implementation of the star college scheme, the practice was to dictate practical protocols to students and manuals were not used. Based on the recommendations of the DBT advisory committee, a faculty team was constituted for the creation of practical manuals. Rather than manuals, these were designed as practical record books. The principle and protocol for each experiment in the curriculum is included and space for students to record the observations and inference after each experiment. In addition, analytical questions related to the experiment conducted are also included. **(Include the number of manuals created)**

iv. *Implementation of ITI:*

ITI (Inspire, Train, Implement) is a comprehensive training programme launched in the academic year 2020-21 to foster interest and aptitude for scientific research among UG students. As part of the Inspire component, a weekly activity called Café Curieux was introduced for first-year students and incorporated as a regular feature in the timetable, conducted on Saturdays. Students were divided into groups of five, with each group presenting during their turn. The components of the activity included:

Journal article presentation – Classic papers that significantly influenced the field of biology were presented.

Technical description of laboratory equipment – The principles of operation and standard procedures of basic laboratory equipment, such as the pH meter, were explained.



Maths in Biology – Mathematical principles applied in scientific experiments were discussed.

resentation on a pioneering scientist's biography – The life and contributions of groundbreaking scientists were highlighted.

Minor research projects – As part of the Inspire component, all first-year students conducted minor research projects to introduce them to research methodology. These projects taught students how to design, execute, and document a research study. The activity focused on investigating factors such as salt, sugar, and oil on the sprouting of green grams. Due to the pandemic, students conducted experiments at home or in hostels, as lab space was unavailable. Reports were submitted at the end of the semester.

During the second year the continuity of ITI was hampered due to the pandemic. In order to compensate, during the odd semester of the III year, students took up **workflow training** as per the proposed plan. They enrolled in one of the offered training modules, such as Basics of Protein Analysis, Bioinformatics, or Karyotyping and Analysis. These trainings, mentored by faculty members, were conducted on Saturdays and during free hours on weekdays. In their final semester, students undertook **undergraduate-level research projects** under the guidance of a faculty mentor, with a total of **thirty-seven** projects completed. ITI is now recognized as one of the department's best practices.

v. ***BioGrad Conclave - The Undergraduate Research Symposium:***

Although the department had a tradition of organizing national or international conferences annually, there was no dedicated platform for undergraduate students to present their research. To address this gap, the BioGrad Conclave, a one-day scientific event where undergraduate and postgraduate students present their research through oral or poster presentations, was introduced. The first edition took place on 16th June 2023, with thirty-seven poster and oral presentations made by undergraduate students based on their research projects. An ISBN book (978-81-962548-9-6) compiling all the abstracts was published. The department has adopted this as an annual programme, with the second edition held in June 2024. **The titles of papers presented by the students (based on their projects is provided in Annexure section II (b) of Annexure 2.**

vi. ***Science Setu Lectures:***

InStem, Bengaluru organized the Science Setu lectures starting in March 2020, running for a year on selected scientific topics. Delivered by eminent scientists from leading research institutions, these lectures aim to ignite a passion for science among students. UG students from the department have participated in many of these lectures.

vii. ***Enhanced Visibility and Improved Rankings for the College:***

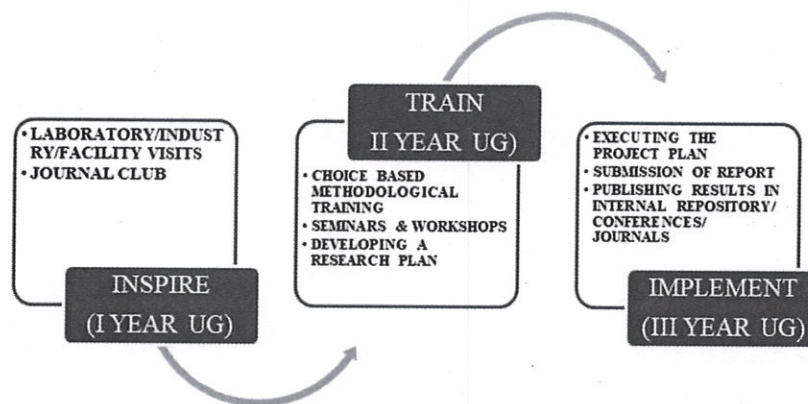
The implementation of the scheme in the Department of Life Sciences has enhanced the brand value and performance of the college in accreditations and rankings. During this period, the college was awarded an **A++ grade with a score of 3.78/4** in the 3rd cycle of NAAC accreditation in 2021. In the **NIRF 2024** rankings, our college achieved **60th place** among the top 100 colleges in the country, marking a significant



improvement from previous rankings.

7. Any Novel aspect introduced during the Scheme duration.

- i. **ITI-Training Programme:** The ITI training module, as shown in the figure below, was introduced. One cycle of the programme has been successfully completed as described in the previous section.



- ii. **Training for Laboratory Staff:** Laboratory staff play an important role in the smooth conduct of practical sessions. A training session was conducted for laboratory staff from Kristu Jayanti College and other colleges nearby. The practice will be continued in the coming years.
- iii. **Lecture Series:** Lecture Series: Two lecture series were introduced during the star scheme duration. The first named **Primer** aimed at providing expert lecture to students on the fundamental principles of process/ technique/ research areas in life sciences.

The second called **Inspire** provides advanced insights into various aspects of research development in Life Sciences

iv. **'Prerana' - Outreach Programme:**

As part of its outreach efforts, the department launched a training programme titled **Prerana – Introduction to Experimental Science** for Higher Secondary and Senior Secondary school students under the Star College Scheme. The programme aims to introduce school students to the exciting world of experimental science through talks, hands-on training sessions, and demonstrations. During the academic year 2020-21, students from two schools participated in the training.

v. **Training programme for Higher Secondary School Teachers:**

A training programme aimed at higher secondary school science teachers was initiated. The teachers received training at the laboratory facilities of Kristu Jayanti College, focusing on basic experiments in Biotechnology and Microbiology. This initiative is designed to empower schoolteachers to effectively teach advanced and applied biology concepts to their students, potentially motivating them to pursue related courses during their graduation.



vi. **Hydra Culture Facility**

A state-of-the-art Hydra Culture Facility has been set up in the department. This new facility is designed to promote the use of *Hydra vulgaris* as an alternative animal model for aquatic toxicity assessments. Unlike traditional animal models, *Hydra vulgaris* offers a significant advantage by not requiring ethical clearance, making it a valuable tool for both environmental and biological research. This aligns with our goal to adopt more sustainable and ethical research practices. The creation of this facility was made possible through the dedication and hard work of our skilled Life Sciences students. Their voluntary efforts in designing, developing, and maintaining the facility have been instrumental in realizing this initiative.

vii. **Kristu Jayanti College Culture Collection Centre [KJ3C]**

During the support period, a Microbial Culture Collection Centre was established at the Department of Life Sciences. It is a dedicated repository that aims to support and enhance academic research, education, and collaboration in the field of microbial sciences. The center is committed to providing a diverse and well-maintained collection of microbial cultures that cater to various research and educational needs. The repository at the Microbial Culture Collection Centre houses 203 species of microorganisms, including bacteria, mold, yeast, microalgae, and other microorganisms. Each strain is meticulously identified, preserved, and catalogued, ensuring authenticity and reliability for both research and educational purposes. The collection provides a valuable resource for enhancing scientific studies and fostering a robust academic and research environment. Through these efforts, the centre continues to play a crucial role in advancing microbial sciences and supporting the academic community at Kristu Jayanti College and beyond. This centre provides microbial cultures to researchers and institutions across India. The culture collection was developed with the help of UG students of the department under the mentorship of Dr. Prasanna Kumar. Students collected samples, isolated the microorganisms, made pure cultures and characterised them biochemically and identified them using 16srRNA typing (partially outsourced). **This activity led to the submission of 126 16srRNA entries by our undergraduate students in NCBI (Some Accession Numbers (<https://www.ncbi.nlm.nih.gov/nuccore/OR731376>)). A list of all accession numbers can be accessed here:**

https://drive.google.com/drive/u/1/folders/1TJ_4aL0f7fVwJBhGcGuOjI6hpfN3k9c_

8. Lessons learnt / difficulties faced/suggestions if any, in implementation of the programme and utilization of DBT grant. (Max 3 points within 300 words).

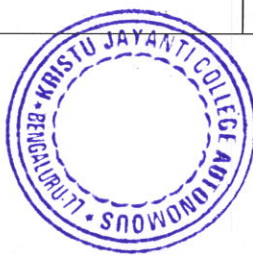
1. The Department of Life Sciences offers BSc programmes with triple major combinations (BBG, MBG, and BBB). These combinations and programmes are provided under the Department of Life Sciences as a single entity, rather than through separate discipline-specific departments. With a total of 700 UG students in the department, meeting the needs (consumables and equipment) of all the students within the sanctioned budget was a challenge. When applying for the second phase of the scheme we would like to apply as separate departments.
2. As stated before, DBT star college scheme has significantly enhanced the brand value of the Department of Life Sciences as well as the college. The rankings and



accreditations to the college have seen a significant improvement during the implementation period. The student enrolment and perceptive value of the department has also improved.

9. Key performance indicators

S. no	Indicator	Pre-support	During /After Support	Remarks
1	No. of students admitted	Total (2019-20) =127 M= 40 F= 87 SC ST OBC G SC ST OBC G 5 0 6 29 8 4 36 39	Total (2020-21) = 161 M= 57 F= 104 SC ST OBC G SC ST OBC G 4 1 18 34 9 2 13 80 Total (2021-22) = 162 M= 62 F=100 SC ST OBC G SC ST OBC G 2 4 11 45 11 4 20 69 Total (2022-23) = 167 M=52 F=115 SC ST OBC G SC ST OBC G 7 0 7 38 10 4 12 89 Total (2023-24) = 176 M= 41 F= 135 SC ST OBC G SC ST OBC G 6 7 28 10 2 24 99	
2	Admission cut-off %	50%	50%	
3	No. of students passing out (%) [Students Admitted/passing out (pass %)]	2017-20 Batch Students admitted-109 Students who took final Exam=100 Students Passing Out=94 Pass %=94/109 =86%	2018-21 Students Admitted-109 Students who took final Exam=101 Students Passing Out=99 Pass %=99/109=91% 2019-22 Students Admitted-127 Students who took final Exam=122 Students Passing Out=113 Pass %= 88.97% 2020-23 Students Admitted-161 Students who took final Exam= 149 Students Passing Out= 134 Pass % = 83.22% 2021-24 Students Admitted-162 Students who took final Exam=158 Students Passing Out= 147 Pass %= 90.74%	



S. no	Indicator	Pre-support	During /After Support	Remarks
4	Drop-out rates	2017-20=8.25%	2018-21 = 7.33% 2019-22 = 3.93% 2020-23 = 7.45% 2021-2024= 2.46%	
5	No. of students opting for MSc / M.Tech/ PG Diploma in Science	36 (38%)	2018-21 = 67 (67%) 2019-22 = 98 (86%) 2020-23 = 129 (96%) 2021-2024= 131 (89%)	
6	Average marks	77%	2018-21=77.75% 2019-22= 75.84 % 2020-23= 74.37% 2021-23= 75.52 %	
7	No. of hands-on experiments being conducted	Biotechnology - 63 Microbiology- 68 Biochemistry- 69 Genetics- 66 Botany-35 Total- 301	Biotechnology - 63 Microbiology- 68 Biochemistry- 73 Genetics- 66 Botany-38 Total- 308	
8	No. of new experiments introduced	Biotechnology- 0 Microbiology- 0 Biochemistry- 10 Genetics- 0 Botany-0 Total-10	Biotechnology- 32 Microbiology- 24 Biochemistry- 12 Genetics- 09 Botany-02 Total-79	
9	Publications (scopus indexed) /patents, if any.	Faculty: 03 Students: NIL	2020-21: Faculty-6/ students:13 (book chapters) 2021-22: Faculty-24/students: 8 (2 articles/ 6 book chapters) 2022-23- Faculty- 9/ Students: NIL 2023-24- Faculty-10/ Students:38 1 (1 scopus article; 37 conference abstracts)	
10	Training received by (A) Faculty (B) Students (Summer/ Winter Projects)	Online Training/ Participation in FDPs-02 NPTEL certificate courses- 05	(A) Faculty 2020-21- Online Training/ Participation in FDPs- 10 NPTEL certificate courses-01 2021-22 Online Training/ Participation in FDPs-09 Refresher Courses-24 NPTEL/ARPIT certificate courses-10 2022-23 Online Training/ Participation in FDPs-10 Refresher Courses-16 NPTEL/ARPIT certificate	



S. no	Indicator	Pre-support	During /After Support	Remarks
			courses-03 2023-24 Online Training/ Participation in FDPs/ Refresher Courses-14 NPTEL/ARPIT certificate courses-02 (B) Students Summer Research Fellowships-01 Summer Projects-37 NPTEL Courses- (2022-23)- (2023-24)- ITI Training – All UG students form 2021-24	
11	Exhibitions/seminars/training courses conducted	Exhibition-1 Seminar/FDP-02 Training (Value added courses) - 03	2020-21 Seminars/FDP- 05 Training (Value add courses) - 05 2021-22 Seminars/Conference/ FDP/ Training - 04 Value added courses – 04 2022-23 Exhibition-1 Seminars/Conference/ FDP/ Training - 05 Value added courses – 04 2023-24 Seminars/Conference/ FDP/ Training - 06 Value added courses – 03	
12	Books/journals subscribed from grants	NIL	2020-21 Books-15 Journals-05 2023-24 Books-40 Journals-03	
13	Outreach activities (Popular lectures)	NIL	2020-21:02 2021-22:06 2022-23:02	
14	Colleges mentored to apply for DBT Star College grants	NIL	NIL	
15	Invited lectures	07	2020-21:17 2021-22:18 2022-23:10 2023-24:05	



10. Details of colleges / schools mentored during the Star Scheme Tenure (Name of college / school; class / standard; No. of students benefited; whether any mentored college applied under Star College Scheme, if yes what was the outcome.

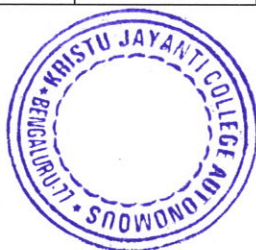
Date	Name of the Activity	Beneficiaries	Website Link to report
08. 03. 2021	'Prerana-Introduction to Experimental Science'-Training for Science students (10+2)	Higher secondary school students from, 1. Royal Concord PU College 2. St. Vincent Pallotti PU College.	https://glimpses.kristujayanti.edu.in/news/outreach-programme-prerana-introduction-to-experimental-science-training-for-science-students-2
16. 3. 2021	'Prerana-Introduction to Experimental Science'-Training for Science students (High School)	High School students from 1. Netaji High School 2. Sri Siddaganga High School	https://glimpses.kristujayanti.edu.in/news/outreach-programme-prerana-introduction-to-experimental-science-training-for-science-students

11. Details of increase in the faculty generated resources viz extramural research grants from other funding agencies to strengthen the Star College Scheme efforts.

Sl. No.	Title	Principal Investigator/ Co-Investigator	Funding agency	Duration (start to end dates)	Amount sanctioned	Status (Completed/ ongoing/applied)
1.	Herbal based formulation for treating Melanoma Hyperpigmentation using human cell lines.	Dr. Calistus Jude	VGST, Bengaluru	2020 - 2021	10 Lakhs	Completed
2.	Elicitation of Natural Oils in Plants with Larvicidal and Mosquito Repellent Properties and Formulation and Evaluation of Novel Mosquito Repellent Products	Dr. Shinomol George K (PI) Dr. Indira M.N (Co PI) Dr. Malathi R (Co PI)	Karnataka State Council for Science and Technology -Science Technology and Innovation in State (STI)	02/03/2023 - 02/03/2024	5 lakhs	Ongoing



Sl. No.	Title	Principal Investigator/ Co-Investigator	Funding agency	Duration (start to end dates)	Amount sanctioned	Status (Completed/ ongoing/applied)
3.	Biodiesel Production from Hydnocarpus wightianus seeds and study of the antibacterial potential of the seed oil against scalp folliculitis causing microorganisms.	Dr. Roopa Prasad Dr. C M Reena Josephine	KSCST	9/02/2023 to 30/06/2023	Rs 7,000	Completed
4.	Formulation of Enriched Fertilizers using Biowaste for Sustainable Crop Cultivation and Soil Productivity	Manikandan K (PI) , Dr. Malathi R (CI)	KSCST	Dec 2022 to May 2023	Rs 7,000	Completed
5.	Bacteriocin - nanoconjugate: active antimicrobial packaging material for food industry	Dr. Sangeetha Menon and Dr. Arpita Mishra	KSCST	19/04//2024 - 18/07/2024	Rs 6500/-	Ongoing
6.	Endophytic fungi from mangroves:a road map for commercialization to compact the disease in pearl millet	Dr C M Reena Josephine and Dr P Roopa	KSCST	19/04//2024 - 18/07/2024	Rs 7000/-	Ongoing
7.	Exploration of potential endophytic actinomycetes derived from mangrove ecosystem and harnessing the efficacy as plant growth promoting and bio-control agent to control disease in pearl millet.	Dr C M Reena Josephine and Dr. Arpita Mishra	KSCST	19/04//2024 - 18/07/2024	Rs 7000/-	Ongoing



Institutional Research Projects (Completed/Ongoing/Applied)

Sl. No.	Title	Principal Investigator/ Co-Investigator	Funding agency	Duration (start to end dates)	Amount sanctioned	Status (Completed/ ongoing/applied)
	Tardiscope: Frugal Imaging Platform for Tardigrade identification and Classification	Dr. Shinomol George K (PI) Dr.Elcey CD (Co.PI)	Kristu Jayanti College Bodhi Niketan Trust	01/06/2022 - 22/12/2023	1.5 lakhs	Ongoing
	Antibiotic-coated Nanoparticles to Combat Biofilm Associated Microbial Pathogens	Dr. Dileep Francis		02/03/2023 - 02/03/2024	1.5 lakhs	Ongoing
	Synthesis of nanoparticles with Anti-hypertensive properties from Mimosa Pudica and evaluation of cardioprotective activity using adult zebrafish	Dr. Nibeditha P. (PI) Dr. Arun S., Dr. Saraswathi, (Co.PI)		04/12/2023 to 04/06/2025	1.5 lakhs	Ongoing
	Waste Recycling for Mushroom Cultivation to Promote Circular Economy and Revenue Generation	Dr. Sangeetha Menon, Dr. Challaraj Emmanuel E S		04/12/2023 to 04/06/2025	Rs. 90,000	Ongoing
	Isolation, Purification and characterization of novel protease inhibitor from plant samples and its application as potential	Dr. Arpita Mishra, Lt. Kushbu R		04/12/2023 to 04/06/2025	Rs 1 Lakhs	Ongoing



Sl. No.	Title	Principal Investigator/ Co-Investigator	Funding agency	Duration (start to end dates)	Amount sanctioned	Status (Completed/ ongoing/applied)
	fungicide against collar rot and yellow mold disease of groundnut					
	Antimicrobial Peptides from Agrowastes as a Novel Tool in Combating Plant Pathogens in Eco-Agriculture	Dr. Roopa Prasad Dr. C M Reena Josephine		04/12/2023 to 04/12/2025	1.5 Lakhs	Ongoing
9.	Synthesis and Characterization of Nanoparticles from Mimosa pudica, and Evaluation of Angiotensin-Converting Enzyme Activity in Mimosa pudica, and Evaluation of Angiotensin-Converting Enzyme Activity in Adult Zebrafish	Dr. Nibedita Pradhan (PI) Dr. Saraswathi (Co-PI) Dr. Arun kumar S (Co-PI)		04/12/2023-04/06/2025	1.50 Lakhs	Ongoing

12. SOPs developed, lab manuals created and uploaded on website or submitted to DBT

Practical Manuals have been created for all undergraduate practical courses. A total of 30 manuals have been prepared and used by students for their experiments. The manuals can be accessed using the following link

(https://drive.google.com/drive/u/1/folders/14vgBXqFDmg_cw5t7ES64Tt2pRIZc0-S_)



13. Self evaluation

Department	*Objective (as stated in proposal)	% achieved	Reasons for underachievement / If achieved, state in quantitative metrics
Life Sciences	Enrich curriculum by introducing more practical component	100%	2/2
	Strengthen the infrastructure and resources in the laboratories	100%	2/2
	Introduce a novel training module (ITI)	100%	2/2
	To develop interactive practical manuals, workflow manuals, SOPs and other resources to aid the training	75%	1.5/2 SOPs for equipment and lap practices are yet to be developed.
	Enrich the knowledge and skills of faculty members through faculty development programmes	100%	2/2 Faculty members have equipped themselves with new knowledge through online FDPs and workshops. However hands-on training for faculty members in facilities outside the
Total			9.5/10

14. Details of the procured equipment (as per submitted asset certificate) which would be retained by the college after completion of the project for future research and academics as Annexure-I with request letter for the retention of procured equipment.

Enclosed as Annexure I

Course Coordinator

Coordinator

DBT Star College Scheme
Kristu Jayanti College, Autonomous
Bengaluru - 560 077 Karnataka



Head of the Institution
PRINCIPAL

Kristu Jayanti College Autonomous
K. Narayanapura, Kothanur PO
Bengaluru - 560077

Annexure I

Details of Equipment Procured

Name of the Department: DEPARTMENT OF LIFE SCIENCES

S. No.	Name of Equipment	Unit Cost	Number of Units	Actual Cost (factual figure, not in lakh)	Date of Placing Order	Date of Receiving Equipment	Remark/Payment Voucher No. with Date (Copy of Payment Voucher may please be enclosed)
1.	Colorimeter	8142.00	06	48852.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021
2.	Chromatography columns with stands (set of 5)	20650.00	01	20650.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021
3.	Fume Hood (Table Top)	100890.00	01	100890.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021
4.	Haemocytometer	5782.00	01	5782.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021



S. No.	Name of Equipment	Unit Cost	Number of Units	Actual Cost (factual figure, not in lakh)	Date of Placing Order	Date of Receiving Equipment	Remark/Payment Voucher No. with Date (Copy of Payment Voucher may please be enclosed)
5.	Heating block	23010.00	01	23010.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021
6.	pH Meter:	7670.00	04	30680.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021
7.	SDS - PAGE	2482.00	03	70446.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021
8.	TLC Chamber	8850.00	03	26550.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021
9.	Vacuum Drier	70210.00	01	70210.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021

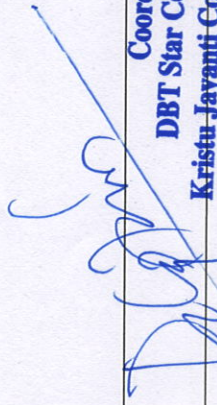
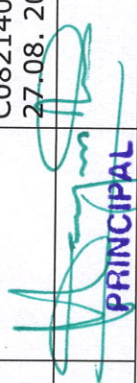


S. No.	Name of Equipment	Unit Cost	Number of Units	Actual Cost (factual figure, not in lakh)	Date of Placing Order	Date of Receiving Equipment	Remark/Payment Voucher No. with Date (Copy of Payment Voucher may please be enclosed)
10.	Western Blot	61360.00	02	122720.00	22. 02. 2021	16. 03. 2021	Invoice No. & Date: AE-700/ 15. 03. 2021 PFMS Advice No. & Date of Payment: C032145456792/ 23. 03. 2021
11.	UV Transilluminator:	90034.00	01	90034.00	22. 02. 2021	08. 03. 2021	Invoice No. & Date: S030/08.03.2021 PFMS Advice No. & Date of Payment: C032146199810/23.0 3.2021
12.	Agarose Gel Electrophoresis:	19470.00	05	97350.00	22. 02. 2021	08. 03. 2021	Invoice No. & Date: S030/08.03.2021 PFMS Advice No. & Date of Payment: C032146199810/23.0 3.2021
13.	Membrane Filtration Assembly (With Vacuum Pump):	19470.00	01	19470.00	22. 02. 2021	08. 03. 2021	Invoice No. & Date: S030/08.03.2021 PFMS Advice No. & Date of Payment: C032146199810/23.0 3.2021
14.	Orbital Shaker	31270.00	01	31270.00	22. 02. 2021	01.03.2021	Invoice No. & Date: 119/2020-21/26. 02. 2021 PFMS Advice No. & Date of Payment: C032146204180/ 29.03.2021



S. No.	Name of Equipment	Unit Cost	Number of Units	Actual Cost (factual figure, not in lakh)	Date of Placing Order	Date of Receiving Equipment	Remark/Payment Voucher No. with Date (Copy of Payment Voucher may please be enclosed)
15.	Soxhlet mantle:	12154.00	01	12154.00	22. 02. 2021	01.03.2021	Invoice No. & Date: 119/2020-21/26. 02. 2021 PFMS Advice No. & Date of Payment: C032146204180/29.03.2021
16.	Tissue Homogeniser	17110.00	01	17110.00	22. 02. 2021	22.03. 2021	Invoice No. & Date 144/2020-21/19. 03. 2021 PFMS Advice No. & Date of Payment: C032146204180/29.03.2021
17.	Micropipettes:	2950.00	12	35400.00	22. 02. 2021	22.03. 2021	Invoice No. & Date PFMS Advice No. & Date of Payment: C032146204180/29.03.2021
18.	Colony counter (Manual)	15500.00	1	15500.00	23.08.2021	27.08.2021	Invoice No. & Date: AE-767/27.08.2021 PFMS Advice No. & Date of Payment: C082140076606/27.08. 2021
19.	Platform Rocker (Gel Rocker)	33500.00	1	33500.00	23.08.2021	27.08.2021	Invoice No. & Date: AE-767/27.08.2021 PFMS Advice No. & Date of Payment: C082140076606/27.08. 2021



S. No.	Name of Equipment	Unit Cost	Number of Units	Actual Cost (factual figure, not in lakh)	Date of Placing Order	Date of Receiving Equipment	Remark/Payment Voucher No. with Date (Copy of Payment Voucher may please be enclosed)
20.	Magnetic Stirrer with hotplate (Stirring capacity- 1L)	10761.60	1	10761.60	23.08.2021	26.08.2021	Invoice No. & Date S005/21- 22/26.08.2021 PFMS Advice No. & Date of Payment: C082140076125/27.0 8. 2021
21.	Magnetic Stirrer with hotplate (Stirring capacity- 2L)	11654.86	1	11654.86	23.08.2021	26.08.2021	Invoice No. & Date S005/21- 22/26.08.2021 PFMS Advice No. & Date of Payment: C082140076125/ 27.08. 2021
22.	Cyclomixer/ Vortex Mixer	12567.00	3	37701.00	23.08.2021	26.08.2021	Invoice No. & Date S005/21- 22/26.08.2021 PFMS Advice No. & Date of Payment: C082140076125/27.0 8. 2021
23.	Microcentrifuge (Bench-top)	66347.86	1	66347.86	23.08.2021	26.08.2021	Invoice No. & Date S005/21- 22/26.08.2021 PFMS Advice No. & Date of Payment: C082140076125/ 27.08. 2021
Total	 Coordinator DBT Star College Scheme Kristu Jayanti College, Autonomous Bengaluru - 560 077 Karnataka		53	998043.32		 PRINCIPAL	

Kristu Jayanti College Autonomous
K. Narayanapura, Kothanur PO
Bengaluru - 560077



Kristu Jayanti College

AUTONOMOUS Bengaluru
Reaccredited 'A' Grade by NAAC | Affiliated to Bengaluru North University

GOVERNMENT OF INDIA
विज्ञान और प्रौद्योगिकी विभाग
MINISTRY OF SCIENCE AND TECHNOLOGY



जैवप्रौद्योगिकी विभाग
DEPARTMENT OF
BIOTECHNOLOGY
DBT STAR COLLEGE SCHEME

Completion Report

29/02/2020-30/11/2023

I. Practical curriculum revision

(Response to Key performance indicator, query No. 7)

Committees were formed to revise the curriculum in alignment with the objectives of the DBT Star College Scheme. Significant changes were made by (a) introducing new experiments, (b) transforming demonstration-based practicals into hands-on experiments, and (c) eliminating redundant experiments. These revisions were approved by the Board of Studies of the respective subjects and the Academic Council.

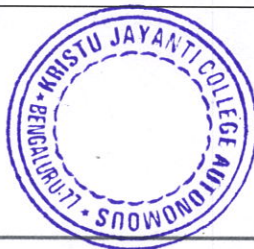
Programme	Date of approval by BoS	No. of New Practical Introduced	No. of experiments converted into hands-on	Link to M.o.M
Biotechnology	17. 05. 2021	32	0	https://drive.google.com/drive/u/1/folders/1hUpNhdowlWKBP30qVn9UGTjhWhlXvC4i
Microbiology	17. 05. 2021	24	0	
Biochemistry	12. 05. 2021	12	4	
Genetics	17. 05. 2021	09	3	
Botany	08. 05. 2021	02	0	
Academic Council	22. 05. 2021			
Total		79	06	

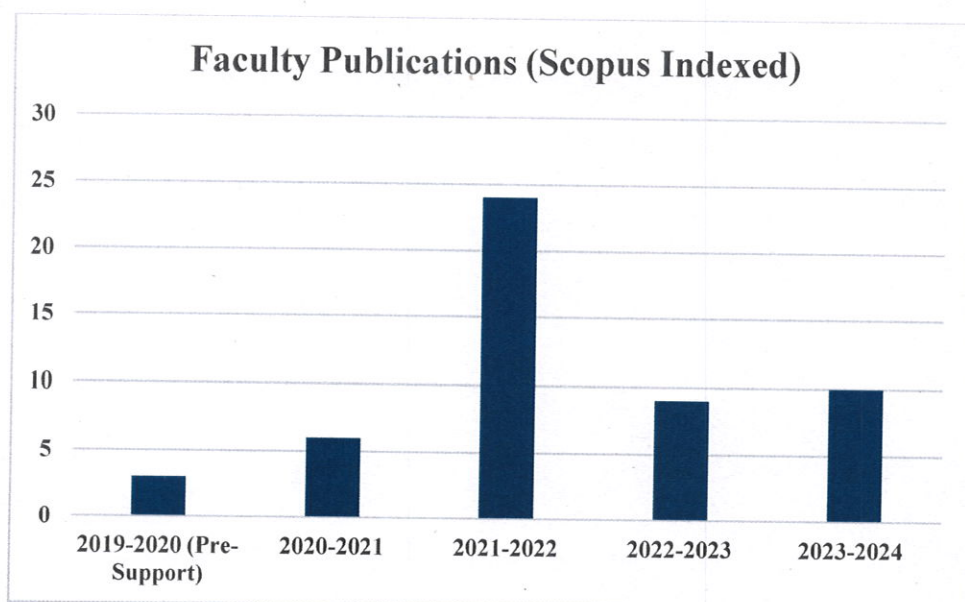
This was a one-time exercise as per the original proposal. The practical's were introduced during the second year of the scheme after being approved by the BoS and Academic Council. These practical's are now a part of the curriculum.

II(a). Faculty Publications (*Scopus indexed*)

(Response to Key performance indicator query No. 8)

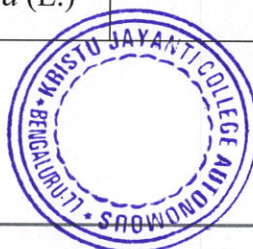
Year	No. of Publications
2019-2020 (Pre- Support)	03
2020-2021	06
2021-2022	24
2022-2023	09
2023-2024	10
Total (During Support Period)	49





List of Scopus indexed Publications (2022-23)

Sl. No.	Name	Title of the Article	Details of Publisher	Month, Year of publication, URL
1.	Dr. Elcey C. D	Non-Antibacterial Carbon Nanoparticles and Its Fluorescence Properties	Journal of the Electrochemical Society	August 2022 https://doi.org/10.1149/10701.9015ecst https://iopscience.iop.org/article/10.1149/10701.9015ecst
2.	Dr. Elcey C. Daniel	Investigation of fluorescence enhancement and antibacterial properties of nitrogen-doped carbonized polymer nanomaterials (N-CPNs)\	International Journal of Polymer Analysis and Characterization	August 2022 DOI: 10.1080/1023666X.2022.2110122 https://doi.org/10.1080/1023666X.2022.2110122
3.	Dr. Indira M.N.	GC-MS Analysis of bioactive compounds in Ethanolic extract of <i>Drymaria cordata</i> (L.)	Research Journal of Pharma and Technology	September 2022, 0974-3618 (Print) 0974-360X (Online)



Sl. No.	Name	Title of the Article	Details of Publisher	Month, Year of publication, URL
		Wild. ex Roem. and Schult.		https://rjptonline.org/HTMLPaper.aspx?Journal=Research%20Journal%20of%20Pharmacy%20and%20Technology;PID=2022-15-9-63
4.	Dr. Sangeetha Menon	Gender Equity closing the Gender GAP	Journal of International Women Studies	December 2022, ISSN: 1539-8706 https://vc.bridgew.edu/jiws/vol24/iss7/1
5.	Dr. Challaraj Emmanuel E.S.	Green synthesis and biological applications of cerium oxide nanoparticles	Jundishapur Journal of Microbiology	October 2022
6	Dr. Elcey C. Daniel	Polymer-Carbon nanocomposite: Synthesis, optical and biocidal properties	Results in Chemistry	February 2023 https://www.sciencedirect.com/science/article/pii/S2211715623000656
7	Dr. Deepak. P	One-Pot Synthesis of Silver Nanoparticles Derived from Aqueous Leaf Extract of Ageratum conyzoides and their Biological Efficacy	Antibiotics	April 2023 ISSN: 2079-6382 https://doi.org/10.3390/antibiotics12040688
8.	Dr. Esther Shoba R and Dr. U. Sivagamasundari	Phytochemical analysis of extract of <i>Baliospermum montanum</i> leaves and evaluation of invitro anticoagulant,	Indian Journals of Medicinal Plants	June 2023 https://www.indianjournals.com/ijor.aspx?target=ijor:mpijpri&volume=



Sl. No.	Name	Title of the Article	Details of Publisher	Month, Year of publication, URL
		antioxidant and anticancer properties.		15&issue=2&article=013
9.	Dr. Indira M.N.	Antimicrobial and Antioxidants studies in Micropropagated plants of <i>Drymaria cordata</i>	Indian Journal of Medicinal Plants	June 2023 doi : 10.5958/0975-6892.2023.00040.0

List of Scopus indexed Publications (2023-24) (till 30. 11. 2023)

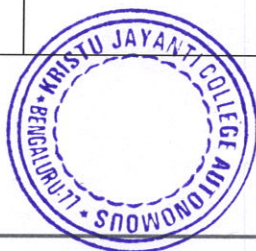
Sl. No.	Name	Title of the Article	Details of Publisher	Month, Year of publication, ISSN No	Article URL
1.	Dr. Nathiya T & Dr. Deepak P	Synthesis and characterization of reduced graphene oxide nanosheets using <i>Saraca indica</i> leaves and their antioxidant, antibacterial, and anticancer applications	Springer	August, 2023, e-ISSN :2190-6823 Print ISSN: 2190-6815 10.2174/9789815123524123020015	
2.	Dr. Deepak P & Dr. Nathiya T	Marine brown algae (<i>Sargassum wightii</i>) derived 9-hydroxyhexadecanoic acid: A promising	Elsevier	August, 2023; Online ISSN: 1727-9321; Print ISSN: 0254-6299 https://doi.org/10.1016/j.sajb.2023.08.064	



Sl. No.	Name	Title of the Article	Details of Publisher	Month, Year of publication, ISSN No	Article URL
		inhibitor of α -amylase and α -glucosidase with mechanistic insights from molecular docking and its non-target toxicity analysis			
3.	Dr. Sangeetha Menon, Dr. Arpita Mishra, Dr. Manikandan K	Phytochemical analysis and in vitro evaluation of antibacterial and antidermatophytic activity of <i>Centella asiatica</i> (L.) Urban extracts	Society for Conservation and Resource Development of Medicinal Plants	September 2023; ISSN:0975-4261; E-ISSN:0975-6892 10.5958/0975-6892.2023.00057.6	
4.	Dr. Priya J. Akkara, Dr. Sonia Angeline	Methanolic leaf extract of <i>Catharanthus roseus</i> reveals wound healing activity on mouse fibroblast L929 cell lines	Society for Conservation and Resource Development of Medicinal Plants	September 2023; ISSN:0975-4261; E-ISSN:0975-6892 10.5958/0975-6892.2023.00057.6	
5.	Dr. Dileep Francis	Effective gene delivery using size dependent nano core-shell in human cervical cancer cell lines by magnetofection	PLoS ONE	September 2023; ISSN:1932-6203 https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0289731	



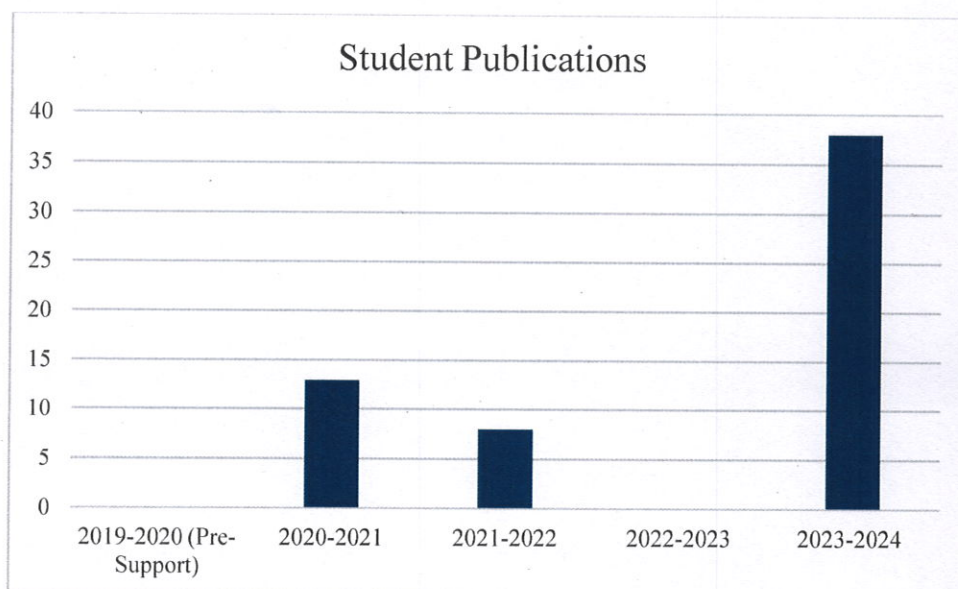
Sl. No.	Name	Title of the Article	Details of Publisher	Month, Year of publication, ISSN No	Article URL
6.	Dr. Dileep Francis	The biofilm proteome of <i>Staphylococcus aureus</i> and its implications for therapeutic interventions to biofilm associated infections	Elsevier	September 2023; ISSN:1876-1623 https://doi.org/10.1016/bs.apcsb.2023.08.002	
7.	Dr. Dileep Francis	Antimicrobial, Antioxidant and anti-inflammatory activities of <i>Justicia adhatoda</i> L. leaf extract	Society for Conservation and Resource Development of Medicinal Plants	September 2023; ISSN:0975-4261; E-ISSN:0975-6892 10.5958/0975-6892.2023.00057.6	
8.	Dr. Deepak P & Dr. Nathiya T	Facile synthesis of ZnO-Y ₂ O ₃ nanocomposite for photocatalytic and biological applications	Elsevier	October, 2023; ISSN No. 1566-7367 https://doi.org/10.1016/j.catcom.2023.106786	
9.	Dr. M. Sonia Angeline & Dr. Priya J. Akkara,	Comparative Analysis of Physico-Chemical, Bacteriological Parameters and Water Quality of Lakes in North Bangalore	Indian Journal of Natural Sciences, International Bimonthly (Print) – Open Access	October, 2023; ISSN: 0976 – 0997,	



Sl. No.	Name	Title of the Article	Details of Publisher	Month, Year of publication, ISSN No	Article URL
10.	Dr. Sangeetha Menon	Studies on the effects of <i>Adansonia digitata</i> Lin's fruits on diabetes	Assoc. Advancement Zoology	Nov. 2023, ISSN: 0253-7214	https://doi.org/10.17762/jaz.v44iS4.1655

II (b). UG Student publications (Articles, Book Chapters & Conference abstracts)

Year	No. of Student Publications
2019-2020 (Pre- Support)	00
2020-2021	13 (Book Chapters)
2021-2022	08 (2 Articles & 6 Book Chapters)
2022-2023	00
2023-2024	38 (Conference Abstracts) + 1 (Scopus Article
Total (During Support Period)	49



Sl. No.	Name	Title of the Article	Details of Publisher	Month, Year of publication, ISSN No	Article URL
1	Alan S Mathew	Inhibition of PI3K/Akt/mTOR Signaling Pathway by Vitis Vinifera Phytocompounds: A Promising Strategy for Suppressing Colorectal Cancer Growth and Metastasis	International Journal of Cell Biology and Cellular Functions, October 2023	October 2023	https://journals.stmjournals.com/ijc-bcf/article=2023/view=128807/

The following abstracts have been published in the edited conference volume titled BioGrad Conclave 2023: Undergraduate Research Symposium Book of Abstracts, ISBN No. 978-81-962548-9-6. **All the papers presented are outcomes of undergraduate research projects conducted as part of the ITI Training Program under the DBT Star College Scheme**

(Google Drive Link to Access-

https://drive.google.com/drive/u/1/folders/1CtntYUB6_9o5EGwCACyc2QoX04IFM1wG)

1. Assessing the Growth Stimulating Effect of Tea Waste Using Solanum lycopersicum
2. Preparation of Medicinal Soap Using Turmeric and Aloe Vera
3. Proximate Analysis of Spinacia oleracea Leaves Collected from Different Parts of Bengaluru
4. Antimicrobial Efficacy of Herbal Tooth Powder against Candida albicans and Staphylococcus aureus
5. Phytochemical Screening of the Crude Extract of Tagetes erecta and Its Antimicrobial Activity against Clinical Pathogens
6. Isolation and Characterization of Protease Enzyme from Chickpea (Cicer arietinum)
7. Investigating Potential Antiviral Agents against Nipah Virus: A Docking-Based Analysis of Protein-Ligand Interactions



8. Impact of Osmotic Stress on the Seed Germination and Seedling Growth in *Cicer arietinum*
9. Studies on the Effect of Different Media on Gut associated microbes and Life History traits of *Drosophila melanogaster*
10. In Silico Screening of Potential Glucagon Antagonists: Identifying Promising Drug Leads for Type 2 Diabetes Mellitus
11. Evaluation of Antimicrobial Activity of Coffee Extract against Pathogenic Microorganisms
12. Therapeutic Potential of Antihypertensive Plants in managing Diabetes: A Comparative Study
13. Characteristic Study on the Effect of Aqueous Garlic Extract on the Biofilms of *Acinetobacter bereziniae* and *Staphylococcus aureus*
14. Phytochemical Profile and Antimicrobial Effects of *Mimusops Elengi* and *Terminalia Cattapa*
15. Isolation and identification of Pathogenic Bacteria from ready to eat fast foods from Kothanur, Bangalore
16. Screening of Phytochemical and Anti-Bacterial Activity of *Trigonella foenum*
17. Study of Effect of *Escherichia coli* infection during neonatal development using chick embryo as a model
18. Production of citric acid by surface fermentation from two *Aspergillus* species and its comparative study
19. Production of bioethanol from fruit waste by *Saccharomyces cerevisiae*
20. Role of Specific Spices in Exterminating Microbes and their Ability to Colonize Organic Media
21. Formulation of Herbal tooth powder and evaluation of antimicrobial activity against oral pathogens
22. Exploring the Potential of *Hylocereus undatus* (Peel Extract) as a Staining Agent in Bacteriology, Mycology and Histopathology
23. A Comparative Study Of Antibacterial Effects Of *Curcuma Longa* And *Curcuma Aromatica* On Bacteria Causing Wound Infections
24. Effect of organic fertilizer- Jeevamrutha treatment on the seedling growth of cucurbits varieties
25. Green Synthesis of Copper oxide nanoparticles using leaf extracts of *Araucaria araucana* and evaluation of their antibacterial activity
26. Extraction and Comparative Analysis of keratin from human hair
27. Evaluation of the Anti-Bacterial Activity of Five Selected Essential Oils: Lemongrass, Lemon, Eucalyptus, Citronella, and Peppermint against *Escherichia coli* DH5 α Strain
28. Isolation, characterization, and purification of *Rhizobium* to enrich
29. productivity by of biofertilizer
30. Investigating Potential Inhibitors of Kyasanur Forest Disease Virus: A Computational Study on Plant Metabolites and Viral Proteins
31. Antimicrobial Activity of Medicated Soaps on Selected Human Pathogens
32. Effect of Mordants on Dyeing Properties of Different Fabrics with Natural Dyes
33. Analysis of food quality by detection of adulterants in food products



34. A Comparative Analysis of Spinach Cultivation Employing Conventional Farming Techniques Versus Organic Farming Techniques
35. Phytochemical Investigation and Antimicrobial Potential of Medicinal Plants: *Mentha piperita* and *Anethum graveolens* L.
36. Effect of colchicine on Seed Germination and Plant Growth in Few Ornamental Plants
37. Comparative Analysis of the Activity of Natural and Chemical Antimicrobial Agents of Topical Application against *Staphylococcus aureus*

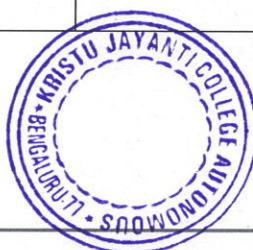
III (a). Faculty Training

(Response to Key performance indicator query No. 9)

Year	No. of Trainings Attended by Faculty (FDP/ Webinars/Workshops/ NPTEL Courses)
2019-2020 (Pre- Support)	07
2020-2021	11
2021-2022	43
2022-2023	29
2023-2024	16
Total (During Support Period)	106

FDP (22-23)

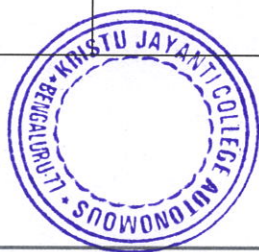
Sl. No.	Date of the Event [DD/MM/YYYY]	Name of the Faculty	Level (State / National / International)	Nature of Programme (Seminar /Conference / Workshop / FDP, etc.)	Title of the Programme & Venue / Organizer details
1.	26/9/2022	Dr. Malathi .R	National	FDP	“Recent Advances in Chemical Sciences”, organized by the Post Graduate and Research Department of Chemistry, Thiagarajar College, Tamilnadu.



Sl. No.	Date of the Event [DD/MM/YYYY]	Name of the Faculty	Level (State / National / International)	Nature of Programme (Seminar /Conference / Workshop / FDP, etc.)	Title of the Programme & Venue / Organizer details
2.	17/12/2022 – 22/12/2022	Dr. Manikandan Kathirvel	National	FDP	“Crafting e-Content” organized by the Internal Quality Assurance Cell (IQAC), Kristu Jayanti College (Autonomous) in collaboration with Risaya Academy, Bengaluru.
3.	7/10/2022	Ms. Kushbu .R	National	Webinar	Intellectual Property and Academics organized by Presidency University, Bangalore.
4.	5/12/2021 – 12/12/2021	Dr. Sangeetha Menon	National	Workshop	Data Analytics using SPSS organized by the Department of Management, Kristu Jayanti College (Autonomous), Bengaluru.
5	16/3/2023 – 17/3/2023	Dr. Manikandan Kathirvel	National	Conference	Revisiting Quality in Higher Education organized by the Internal



Sl. No.	Date of the Event [DD/MM/YYYY]	Name of the Faculty	Level (State / National / International)	Nature of Programme (Seminar /Conference / Workshop / FDP, etc.)	Title of the Programme & Venue / Organizer details
					Quality Assurance Cell (IQAC) Kristu Jayanti College (Autonomous), Bengaluru.
6	10/2/2023	Dr. Manikandan Kathirvel	National	Webinar	AI Microscopy Symposium organized by Labroots, Bengaluru.
7	6/2/2023 – 13/2/2023	Dr. Manikandan Kathirvel	National	FDP	E-Content: Design & Application organized by the Department of Management, Kristu Jayanti College (Autonomous), Bengaluru.
8	9/2/2023	Dr. Manikandan Kathirvel	National	Webinar	A Modern Approach to Screening for Monoclonal Gammopathies using Digital Workflows organized by Labroots, Bengaluru.



Sl. No.	Date of the Event [DD/MM/YYYY]	Name of the Faculty	Level (State / National / International)	Nature of Programme (Seminar /Conference / Workshop / FDP, etc.)	Title of the Programme & Venue / Organizer details
9	23/2/2023	Dr. Manikandan Kathirvel	National	Webinar	Blood Smear and Bone Marrow Staining organized by Labroots, Bengaluru.
10	2/5/2023 – 10/5/2023	Ms. Kushbu .R Dr. Sonia Angeline .M Dr. Malathi .R Dr. Shinomol George .K Dr. Esther Shobha .R	National	FDP	Blended Learning: Tools for Teaching & Research” organized by the Department of Commerce (UG), Kristu Jayanti College, Bengaluru.

REFRESHER COURSES (22-23)

Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course provider
1.	4/9/2022 – 18/9/2022	Dr. Malathi .R	Environmental Science	Teaching Learning Centre Department of Environmental Studies Ramanujan College, University of Delhi



Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course provider
2.	4/9/2022 – 18/9/2022	Dr. Indira M.N.	Environmental Science	Teaching Learning Centre Department of Environmental Studies Ramanujan College, University of Delhi
3.	7/10/2022	Dr. Jyoti Ramojwar	Environmental Science	Teaching Learning Centre and Department of Environmental Studies, Ramanujan College, University of Delhi under the aegis of Ministry of Education Pandit Madan Mohan Malaviya national mission on teachers and teaching.
4.	7/10/2022 – 20/10/2022	Dr. U.Sivagamasundari	Botany	UGC – HRDC, University of Madras, Chennai
5.	20/12/2022	Dr. Manikandan Kathirvel	Zoology	Teaching Learning Center Ramanujan College under the Ministry of Education sponsored Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNTT) scheme.
6.	28/12/2022 – 11/1/2023	Dr. Ashok .D	Environmental Science	Teaching Learning Center Ramanujan College, University of Delhi
7.	28/12/2022 – 11/1/2023	Dr. Elcey C.D	Environmental Science	Teaching Learning Center Ramanujan College, University of Delhi



Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course provider
8.	29/11/2022 – 13/12/2023	Ms. Kushbu .R	Chemistry	Teaching Learning Center Ramanujan College, University of Delhi
9.	23/1/2023 – 6/2/2023	Dr. Challaraj Emmanuel E.S.	Advanced Research methodology	Teaching Learning Centre, Ramanujan College University of Delhi in collaboration with Department of Chemistry, Miranda House University of Delhi
10.	17/3/2023 – 1/4/2023	Dr. Sangeetha Menon	Life Sciences	Teaching Learning Centre, Ramanujan College University of Delhi in collaboration with Department of Chemistry, Miranda House University of Delhi.
11.	17/3/2023 – 1/4/2023	Dr. Arpitha Mishra	Life Sciences	Teaching Learning Centre, Ramanujan College University of Delhi in collaboration with



Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course provider
				Department of Chemistry, Miranda House University of Delhi.
12.	22/4/2023 – 5/5/2023	Dr. Esther Shobha .R	Advances in Research Methodology	Teaching Learning Centre Ramanujan College, University.
13.	May 2023	Dr. Sangeetha Menon	Let us fight AMR: An awareness about antimicrobial resistance organized under the aegis of UNESCO's Open education for better world initiative	Ramnarain Ruia Autonomous College, Department of Microbiology.
14.	6/6/2023 – 20/6/2023	Dr. Vijayanand .S	Managing Online Classes and Co –Creating MOOCS 27.0	Teaching Learning Centre Ramanujan College, University of Delhi
16.	28/12/2022 – 11/1/2023	Dr. Sriram Thiruvengadam	Environmental Science	Teaching Learning Center Ramanujan College, University of Delhi



Online Course [NPTEL] (22-23)

Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course provider
1.	24/11/2022	Dr. Priya Jossan Akkara	Cell Culture Technologies	NPTEL
2.	5/4/2023	Dr. Roopa .P	Introduction to Professional Scientific Communication	NPTEL
3.	5/4/2023	Dr. Reena Josephine	Introduction to Professional Scientific Communication	NPTEL

Refresher Course 2023-24

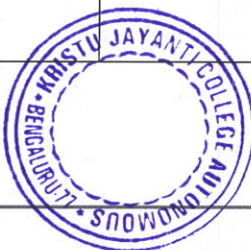
Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course Provider	Course Duration Start – End Date
1.	26/08/2023	Dr. Indira M N	Botany	Teaching Learning Centre Ramanujan College, University of Delhi	29/07/2023-13/08/2023
2.	26/08/2023	Dr. Shivagamasundari U	Botany	Teaching Learning Centre Ramanujan College, University of Delhi	29/07/2023-13/08/2023
3.	26/08/2023	Dr. Jyoti M Ramojwar	Botany	Teaching Learning Centre Ramanujan College, University of Delhi	29/07/2023-13/08/2023
4.	26/08/2023	Dr. Shinomol George	Botany	Teaching Learning Centre Ramanujan	29/07/2023-13/08/2023



Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course Provider	Course Duration Start – End Date
				College, University of Delhi	
5.	26/08/2023	Dr. Malathi R.	Botany	Teaching Learning Centre Ramanujan College, University of Delhi	29/07/2023-13/08/2023
6	26/08/2023	Dr. C. Prasanna Kumar	Role of Teachers in Institutional Quality Assurance and Quality Enhancement	Human Resource Development Centre, Kristu Jayanti College, Bengaluru	04/06/2024-22/06/2024
6.	09/10/2023	Dr Jagadisha T V	Zoology	Teaching Learning Centre, Ramanujan College University of Delhi in collaboration with Harmal Panchakroshi Shikshan Mandal's Ganpat Parsekar College of Education Vidya Sankul, Bhom Plateau, Harmal,Goa under the aegis of Ministry Of Education Pandit Madan Mohan Malaviya National Mission On Teachers And Teaching	16/09/2023 to 30/09/2023
7.	09/10/2023	Dr. Saraswathi	Zoology	Teaching Learning	16/09/2023 -30.09.2023



Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course Provider	Course Duration Start – End Date
				Centre, Ramanujan College University of Delhi in collaboration with Harmal Panchakroshi Shikshan Mandal's Ganpat Parsekar College of Education Vidya Sankul, Bhom Plateau, Harmal, Goa under the aegis of Ministry Of Education Pandit Madan Mohan Malaviya National Mission On Teachers And Teaching	
8.	09/10/2023	Prof. Ashok D.	Zoology	Teaching Learning Centre, Ramanujan College University of Delhi in collaboration with Harmal Panchakroshi Shikshan Mandal's Ganpat Parsekar College of Education Vidya Sankul, Bhom Plateau, Harmal, Goa under the aegis of Ministry Of	16/09/2023 - 30.09.2023



Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course Provider	Course Duration Start – End Date
				Education Pandit Madan Mohan Malaviya National Mission On Teachers And Teaching	
9.	20/02/2024	Dr. Sangeetha Menon	Natural Sciences	Teaching Learning Centre, Ramanujan College, University of Delhi	29/01/2024 - 12/02/2024
10.	20/02/2024	Dr. Challaraj Emmanuel E S	Natural Sciences	Teaching Learning Centre, Ramanujan College, University of Delhi	29/01/2024 - 12/02/2024
11.	20/02/2024	Dr. Arpita Mishra	Natural Sciences	Teaching Learning Centre, Ramanujan College, University of Delhi	29/01/2024 - 12/02/2024
12.	20/02/2024	Dr. S. Vijayanand	Natural Sciences	Teaching Learning Centre, Ramanujan College, University of Delhi	29/01/2024 - 12/02/2024
13.	20/02/2024	Ms. Kushbu.R	Natural Sciences	Teaching Learning Centre, Ramanujan College, University of Delhi	29/01/2024 - 12/02/2024



Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course Provider	Course Duration Start – End Date
14.	20/02/2024	Dr. Sriram T	Natural Sciences	Teaching Learning Centre, Ramanujan College, University of Delhi	29/01/2024 - 12/02/2024

NPTEL CERTIFICATIONS 23-24

Sl. No.	Date of Certification [DD/MM/YYYY]	Name of the Faculty	Title of the Course	Complete Details of Course Provider	Weblink of the Course Home Page
1.	15/02/2024	Dr. P. Roopa	Cell Biology: Cellular organization, division and processes	NPTEL	
2.	15/02/2024	Dr. C. M. Reena Josephine	Cell Biology: Cellular organization, division and processes	NPTEL	

B. Student Training

Science Academies Summer Research Fellowship

Sl. No	Name	Duration	Institute	Mentor
1.	Sonia Elizabeth James	1 st June to 28 th July 2024	Jawaharlal Nehru Centre for Advanced Scientific Research	Dr. Amitabh Joshi



NPTEL Courses (2023-24)

Sl. No	Name of NPTEL courses	No. of students appeared	Elite Students	No. of students passed
01	Introduction to Cell Biology	140	13	127
02	Cell Biology	02	02	-
03	Cell culture Technologies	07	06	01
04	Plant cell Bioprocessing	30	30	-
05	Genetic Engineering	01	-	01
06	Canning Technology	01	-	01
07	Ecology and Environment-	18	-	18

NPTEL Courses (2022-23)

Sl. No	Name of the Course	No. of Students Passed
1	Introduction to proteomics	4
2	Organic farming to sustainable agricultural production	37
3	Bioreactors	48
4	Plant cell Bioreactors	34



IV (a). Exhibitions/seminars/training courses conducted*(Response to Key performance indicator query No. 10)***Seminars/ Conferences/Colloquiums****Exhibitions/seminars/training courses conducted [2022-2024]**

Sl. No.	Date of Certification [DD/MM/YYYY Y]	Title of the Programme	Nature of Programme	Participants
1.	24/02/2023	Creatrix	Exhibition	Intra-departmental, students from UG
2.	27/02/2023 - 28/02/2023	'Science Litigants' and Biothon.	Quiz	Intra-departmental, students from UG
3.	31/03/2023	Bioinformatics Tools	Training	Intra-departmental, students from UG and PG courses, faculty members
4.	20/01/2023	Vignana Vicintana	Research Colloquium	Intra-departmental, students from UG and PG courses, faculty members
5.	28/01/2023	Developing Effective Bioinformatics Programming Skills	Workshop	Inter-departmental, students from UG
6.	24/01/2023 & 25/01/2023	Plant Microbiome synergy: Unravelling strategy of Natural resource Management	International Conference	Academicians/Industrialists/ research scholars/ students from institutions from the country and outside



Sl. No.	Date of Certification [DD/MM/YYYY]	Title of the Programme	Nature of Programme	Participants
7.	24/03/2023	Building a Biotech Startup	Panel Discussion	Inter-departmental, students from UG
8.	16/06/2023	BioGrad Conclave	Seminar	Inter-departmental, students from UG
9.	22/02/2024 - 23/02/2024	International Conference on "Transdisciplinary Research in Life Sciences: Perspectives and Prospects (ICTRLS-2024)	International Conference	All UG and PG students of Life Sciences and External participants
10.	03/10/2023	Connoisseur'23	Intra-collegiate UG Bio- Fest	Intra-departmental, students from UG
11.	24/01/2024	Bioaura 24	Inter-collegiate Fest	All UG and PG students of Life Sciences and External participants
12.	11/11/2023	World Diabetes Day	E-Poster Competition	UG students of Life Sciences
13.	26/08/2023	Civic Sense	Awareness Programme	UG students of Life Sciences
14.	10/11/2023	Diabetes and Prevention Healthcare	Health Check	Department of Life Sciences



IV (b). Add-on Courses, Value Added courses

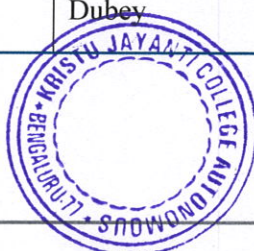
(Response to Key performance indicator query No. 10)

Title of the Course	Year	Class / No of target students	Faculty in charge
Essentials of Research in Science	2023-2024	III year UG students	Dr. Challaraj Emmanuel, Associate Professor Dr. Sriram, Assistant Professor Dr. Nibedita, Assistant Professor Dr.S.Vijayanand, Associate Professor Dr.Malathi, Assistant Professor Dr.Roopa, Assistant Professor
Green Technology and sustainable practices	2023-2024	II year UG	Dr. Indira M.N., Dr. Sivagamasundari. U, Dr. Jothi Ramojwar and Dr. Nathiya
Life Style diseases	2023-2024	I Year UG	Dr. Arun Kumar S, Assistant Professor Dr. Arpita Mishra, Assistant Professor Mr. Ashok, Assistant Professor Dr.Saraswathi, Assistant Professor
Vermi composting	2022-2023	II Year BTBC & BOBT	Dr.Hanumantappa Dr.Arun Dr.Manikandan
Seed Technology	2022-2023	II year BTGE & MBGE	Dr.Indira Dr.Sundari Dr.Arпита
Environmental Manganement	2022-2023	I Year UG	Mr.Ashok Ms.Kushbu Dr.Reena
Essentials of Research in science	2022-2023	III Year UG	Dr.Sriram Dr.Roopa Dr.Malathi



V. Books & Journals (Response to Key performance indicator query No. 11)

Sl. No	Title	Author
Book		
1.	Biotechnology for Food agriculture & Environment	Bharadwaj
2.	Fundamentals of Molecular Biology	Nagarajan
3.	Biodiversity a global concerns	Sinha
4.	Textbook of Genetics	Jain
5.	ImmunoBiology	Jain
6.	Biostatistics an introduction	Mariapan
7.	Methodology of Biological science	Ravikiran
8.	Biodiversity	Wanganee
9.	The DBS HB of Biotechnology	Kumar
10.	TextBook of Microbiology	Kalasav
11.	Bios Instant Notes- Microbiology	Bios
12.	Food Microbiology	Adam
13.	Cell Biology & Genetics	Choudhary
14.	Genetics Analytics	Sanders
15.	Handbook of Enzyme Biotechnology	Hamilton
16.	Skill development in Biochemistry	Mohammed
17.	Molecular Biology of Cell	Wilson
18.	Biochemistry	Voet
19.	Food fermentation	Kumar
20.	Textbook of Biochemistry	Rafi
21.	Green methods in Chemistry	Bisht
22.	Advanced Biotechnology	Dubey



Sl. No	Title	Author
23.	Plant Biotechnology	BD Singh
24.	Enzymes: novel Biotechnological approaches	Hamilton
25.	A Textbook of Biotechnology	Dubey
26.	Immunobiology	Jain
27.	Medical Biochemistry	Dandekar
28.	Environmental Biology	Kumar
29.	Food Chemistry	Singh
30.	CSIR Net/Biochemistry textbook for CSIR	Choudary
31.	Food Science	Pathak
32.	Taxonomy of Angiosperms	Mathur
33.	Medicinal Chemistry	Sachdeva
34.	Handbook of RNA Biochemistry	Carter
35.	Cytology, Genetics and Infectious diseases	Parveen
36 .	Plant Biotechnology	Slater
37.	Bio separations downstream processing for Biotechnology	Kumar
38.	Biotechnology for food agriculture & environ	Jaffer
39.	Advanced Biotechnology	Dubey
40.	Textbook of Microbiology	Ananthanar
Journals		
1	Indian Journal of Experimental Biology	
2	CSIR News	
3	Indian Journal of Biochemistry and Biophysics	
4	Indian Journal of Natural Products and Resources	



VI. Outreach Activities

(Response to Key performance indicator query No. 12)

Outreach Activities [2022-2024]

Sl. No.	Date [DD/MM/YY YY]	Name of the Activity	Beneficiaries
2.	18/09/2022	World clean-up day	Public Park, Byrathi, Kothanur, Bangalore
2.	31/03/2023	Lab to Land	Guanella Preethi Nivas, Banjara Residency, Hennur Gardens, Amani Byrathikhane, Bangalore.

VII. INVITED LECTURES (2020-21) *(Response to Key performance indicator query No. 14)*

Invited Lectures [2022-2024]

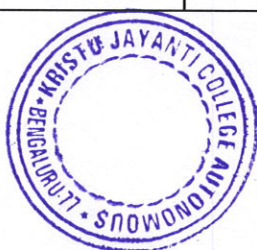
Sl. No.	Date of Certification [DD/MM/YY YY]	Full Title	Name of the Resource Person(s) with designation	Number of Participants
1.	26/08/2022	Digital Entrepreneurship: New Opportunities and Challenges	Ms. Sunitha S Managing Director- Qualvo Solutions Director – My Fresh Basket Digital Mall Private Limited, Bangalore.	97



Sl. No.	Date of Certification [DD/MM/YY YY]	Full Title	Name of the Resource Person(s) with designation	Number of Participants
2.	07/09/2022	Vidwat sammilan	Prof. Gurmeet Singh Hon'ble Vice Chnacellor, Pondicherry University, Pondicherry.	387
3.	24/09/2022	One Life One Planet	Shri A J Anil Kumar Philanthropist and Environmentalist, Anantapur, Andra Pradesh.	146
4.	24/09/2022	Biology and Business	Dr.R. Senthil Kumar GPS Institute of Agricultural Management, Bangalore.	91
5.	20/10/2022	IPR Protection in India	Dr. Sharana Gouda Assistant Controller of patent and desings. Head Biotehnology Group, Patent Office, Chennai.	97
6.	28/10/2022	An ongoing Journey in Biomedical Research	Dr. Vivek Abraham Director, Oncology Search and Evaluation, Abbvie, USA.	160



Sl. No.	Date of Certification [DD/MM/YY YY]	Full Title	Name of the Resource Person(s) with designation	Number of Participants
7.	28/10/2022	Germany Land of opportunities for Higher Education	Mr. Thorsten Schildgen German Language Trainer, Kristu Jayanti College, Autonomous, Bangalore.	261
8.	04/11/2022	Vidwat Sammilan	Prof. BJ Rao Vice-Chancellor, University of Hyderabad.	550
9.	25/01/2023	Vichaaramanthan	Padma Shri Dr. T.S. Chandrasekar MD, DM, D.sc, FRCP (Edinburg, Glassgow, Ireland & London) Chairman & Chief Gastroenterologist, MedIndia Hospitals, Chennai	550
10.	20/01/2023	Viral Genetics Medicine: Genesis and Progress	Dr. Sam Laurel Stephen Gene Therapy Subject Matter Expert, Biostrategy Department, Boehringer Ingelheim, Boehringer, Germany.	150



Sl. No.	Date of Certification [DD/MM/YY YY]	Full Title	Name of the Resource Person(s) with designation	Number of Participants
11.	21/09/2023	Reminisce	1) Dr. Brijesh K Singh , Postdoctoral Scientist, Centre for Neural Sciences and Medicine 2) Dr. Dileep Vijayan , Scientist D, Jubilee Centre for Medical Research, Jubilee Mission Medical College & Research Institute	221
12.	10/11/2023	Diabetes and Prevention Healthcare	Dr. Sunitha, Physician, NAALM	25
13.	11/11/2023	Diabetes and Prevention Health Care	Dr. Sunitha, Physician, NAALM	191
14.	05/02/2024	Cancer Awareness	Dr. Bharat Shankar , Surgical Oncologist, Vydehi Institute of Medical Sciences and research center, Bengaluru	232



Sl. No.	Date of Certification [DD/MM/YY YY]	Full Title	Name of the Resource Person(s) with designation	Number of Participants
15.	28/02/2024	National Science Day-Lecture	Dr. Deepak Kumar Saini , Professor, Department of Developmental Biology and Genetics/Bioengineering, Indian Institute of Science, Bengaluru.	340



Course Coordinator

Coordinator

DBT Star College Scheme

**Kristu Jayanti College, Autonomous
Bengaluru - 560 077 Karnataka**




Head of the Institution

PRINCIPAL

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