

DEPARTMENT OF BOTANY & BIOTECHNOLOGY
PERIODIC REPORT 2023-24

The Department of Botany and Biotechnology was set up during the year 2005. The Department has a strength of 155 students. The Department has well qualified and competent faculty members who are dedicated to the academic and overall development of the student community. The Department has two undergraduate courses viz. BSc. Botany and Biotechnology and BSc. Botany. All the faculty members are actively engaged in the conduct of both the theory and practical sessions. The Department is dedicated to inculcating excitement and interest in life science, and fostering an attitude of life-long learning, pursuing excellence in teaching, developing analytical and critical thinking skills, scientific communication and science literacy among students, helping students make connections among disciplines, establishing a thorough understanding of the fundamental principles in the life sciences, developing intellectual, personal, leadership and social potential of our students, staff and faculty in an environment of respect and cooperation.

Objective

To provide graduate students an opportunity to develop a deep understanding and enjoyment of life science coupled with applied science, to carry out original research by way of projects, to become effective teachers and communicators and to prepare themselves for their future careers.

Mission of the Department

To promote understanding and appreciation of the scientific world among all students. To establish an atmosphere of creative endeavour that supports interdisciplinary collaborations, innovative projects, significant research and informal discussions that mutually benefit students, faculty and the community at large.

Vision of the Department

To promote and support a comprehensive, innovative and dynamic learning environment. To assist students in acquiring a conceptual understanding of concepts of Botany and Biotechnology, its theories and applications. The Department strives to prepare students for an increasingly complex and technical world, for careers and advanced study in biological fields. Emphasis is given to those students interested in nurturing a curiosity for life-long learning in life science, obtaining a Botany/Biotechnology major, learning how life science intersects with and connects to other disciplines,

engaging in collaborative and independent research, preparing for a career in life science and preparing for professional or postgraduate studies.

FACULTY

1. Dr Anita S: Asisstant Professor & Head
Roles: Secretary & Member, College Council
Member, IQAC
Convenor, NAAC Criterion III
Convenor, Remedial Coaching Cell
Convenor, Research Cell
Member, Purchase Committee
2. Mr. Shabeer Ahmed, N.
Roles: Member, Centre for Life science
Member, Discipline Committee
3. Dr Priya Gopinath, T.
Roles: Staff Editor, College Magazine
Member, College Union Election
Member, Programme Committee
Convenor, Nature Club
Mentor, BIS
Member, Library Advisory Committee
Member, Career Advancement & Placement Cell
4. Dr Shabna, A.
Roles: Member, Nature Club
Member, NAAC Criterion III
Coordinator, Centre for Life science
5. Ms Nazeeba, N.
Roles: Member, Nature Club
Member, Centre for Life science
6. Ms. Sandra, V.P. (Guest Faculty in Zoology)
7. Mr Sunil Kumar, S. (Lab Assistant)
8. Ms Sooryaprabha, P.A. (Lab Assistant)

Major Recommendations

1. Programme Analysis

The Department conducts two undergraduate life science programmes namely BSc. Botany, and BSc Botany & Biotechnology.

BSc Botany & Biotechnology is a double main course which commenced in 2005. The programme has two core subjects namely Botany and Biotechnology, the complementary course being Biochemistry. In addition to the above, Zoology papers are also included for them to become eligible to admission for BEd programme. The Programme is a combination of basic science and applied science. The current syllabus is designed to equip students to progress themselves into major scientific disciplines for their higher studies and a career in life science. Many alumnis of the above programme are currently working as PhD Scholars, and also in many reputed Biotech companies.

Similarly, BSc Botany, a conventional basic lifescience programme, started during the year 2020, includes Botany as core subject and Chemistry and Zoology as complementary subjects. The programme critically focuses on students who are immensely interested in plants and plant science area. As the new world is revolving around the utilization of organic and plant products for the sustainability of life, research and development in plant science is one of the major aspects of this programme.

Transition to four year programme will, definitely help the students to know much about the subject and also help to develop their research skills and practical knowledge, which would certainly help them to compete better for the challenges arising in their fields. Such transition will definitely attract the students because it could be a new opportunity for them to pursue higher education in international universities with the international standard of learning process.

2. Recommendations on programme excellence and result improvement.

As a basic science programme, both courses need much more scientific environment such as improved lab facilities, smart class rooms, research-oriented internship activities, lab visits etc.

Both courses have student intake in a general manner. As per the mentor reports, basically three categories of students were identified. Excellent, Good and Average students. Upon a detailed survey based on the results,

majority of students come under average category. In order to increase the result of such students special initiatives have been implemented such as

1. Monthly assessment of subjects to be done based on syllabus progression
2. Special privilege and consideration to be given during CA marks for better regular performers.
3. Special Confidence building sessions and exam preparations to be given before each semester exams.

3.Recommendation on Integrated B.Ed. Programme

An integrated B.Ed programme in life sciences will not be beneficial to the students in our perspective. The scheme and syllabus of the already existing degree programmes including B.Sc Botany and B.Sc Botany and Biotechnology are hectic with heavy workload for students. The integrated B.Ed degree programme could be academically challenging during the course of study. There are already a number of B.Ed colleges in the city offering natural science both in the government/aided/unaided/self-financing sector.

We will be able to come to a conclusive opinion about this new initiative only after understanding the scheme and syllabus in detail.

4.Recommendation on Campus discipline and attendance

A strict attendance policy has to be maintained in the college. The matter is being addressed in the light of the unauthorized absence of a student in the Department during the previous semester (S5), who had only 30 % attendance during the entire semester. The DLMC recommended semester out process for this particular student. The matter was informed to the student. However, the department was forced to revoke the decision as the student had produced a letter duly recommended by the staff advisor of the college. As per the previous council decisions, prior permission from the department has to be obtained by the concerned students for participating in any activity.

5.RESULT ANALYSIS

BSc. Botany& Biotechnology

Batch 2020- 2023

Final Result

No of Students registered: 27

No of degree qualified students: 22

Pass percentage: 81%

Batch 2021-2024

Semester III

Total No of Students: 33

No. of students Registered:33

Total Semester Pass: 8

Sl No	Details of Paper	Total passed
1	English Ms Roshni	31
2	Biochemistry Ms Athila	13
3	Botany I Dr Anita & Ms Nazeeba	12
4	Botany II Dr Priya	20
5	Biotechnology I Dr Shabna & Ms Rudra	18
6	Biotechnology II Mr Ratheesh	14

Semester IV

Total No of Students: 31

No. of students Registered :28

Total Semester Pass: 08

Sl No	Details of Paper	Total passed
1	English Mrs Roshni	24
2	Biochemistry Mrs Athila	18
3	Biochemistry Practical Mrs Athila	26
4	Botany I Dr Priya & Ms Nazeeba	09
5	Botany II Dr Anita & Mrs Nazeeba	19
6	Botany Practical Dr Anita & Mrs Nazeeba	26
7	Biotechnology I Mr Shabeer	13
8	Biotechnology II Dr Shabna	16
9	Biotechnology Practical Mr Shabeer & Dr Shabna	27

BSc. Botany

Batch 2020- 2023

Final Result

No of Students registered: 20

No of degree qualified students: 9

Pass percentage: 45%

Batch 2021-2024

Semester III

Total No of Students:20

No. of students Registered: 20

Total Semester Pass:6

Sl No	Details of Paper	Total passed	Faculty
1	English	18	Mrs Neena
2	Second language	17	Mr Suresh Kumar, Dr Rajeswari, Mr. Ubaid A
3	Botany	11	Dr Anita, Dr Priya, Mrs.Nazeeba
4	Chemistry	8	Mrs.Deepthi RV
5	Zoology	9	Mr.Ratheesh kumar

Batch 2021-2024

Semester IV

Total No of Students: 20

No. of students Registered: 20

Total Semester Pass: 10

Sl No	Details of Paper	Total passed	Faculty
1	English	17	Mrs Neena
2	Second language	19	Mr.Suresh Kumar, Dr.Rajeswari, Mr.Ubaid A
3	Botany	12	Dr Anita, Dr Priya, Mrs.Nazeeba
4	Chemistry	16	Mrs Deepthi RV
5	Zoology	17	Ms.Sandra Victor

6. Extension Activities

Study tour for the final year students of 2020-2023 batch was conducted. They visited the Botanical Survey of India, Coimbatore and attended a one day lecture on herbarium techniques.

The students of semester II and semester IV Botany and Botany and Biotechnology participated in the research fest held at Karyavattom campus on 22 June 2023.

The semester I students of Botany and Botany and Biotechnology participated in the open day at IISER on 20th October 2023.

Students of our department visited the Trivandrum Titanium Products Limited, situated in Trivandrum on behalf of standards club of BIS, mentored by our Department faculty

Students also participated and won prizes on BIS standard writing competition.

Our students also participated and won second prize in poster presentation competition on mental health awareness conducted by the Department of Psychology.

A talk on Growth and Opportunities of Medical Coding by Thought Flows Academy in the Department on 10.11.2023.

7. Suggestions

Hands on training programmes for students need to be implemented on a yearly basis in order to ignite their research skills. Job or study abroad programmes need to be introduced for our students.

Improving classroom facilities such as replacing old and worn out furniture.

Being a science Department, at least one smart classroom need to be provided.

Strict discipline and depolitication of the campus.

MENTOR REPORTS

BSc. Botany and Biotechnology 2021-24

Mentor: Shabeer Ahmed N

Total No of Students: 30

University results of both semester I and II (2021-2024 batch) were published only in the second year just before the semester IV examination. A personal meeting with each student was conducted and the reason for not clearing each paper was enquired. Majority of students informed about the short duration of semester completion, in addition to the heavy weightage of each paper, especially in the dual core degree programme. Most of the students who were academically weak put forth a concern that the preparatory time was extremely short, about a week just prior to the examination. On account of this, a detailed PTA meeting was conducted at the beginning of semester V, during which the parents of weak and irregular students were strictly warned about their performance and attendance. The parents and students gave an assurance that there would be a better performance from their part in the fifth and sixth semesters.

Remedial Measures implemented

Considering the recommendations and concerns of parents and students, students were grouped into six study groups. One student from each group was selected as the team leader and Whatsapp groups were formed. Each day the group leader shares the details of topics to be covered and the group members were assigned the topics to be learned. Every Friday, assessment tests were conducted by the concerned teachers. Subsequently, a review and discussion on the test paper marks were carried out. Upon a primary assessment, the students showed progress in their performance.

B.Sc Botany 2021-24

Mentor - Dr Priya Gopinath, T.

The 2021- 24 batch of BSc. Botany department has 20 students with different academic as well as extra-curricular capabilities. As the mentor of the class, I always make sure that they find it easy to approach and communicate their needs and well as apprehensions with their mentor without any hesitations.

As a mentor, following steps were taken for the overall development of each mentee:

Assessed mentee's background, knowledge, skill, motivation, experience, hobbies, etc. by communicating with each student during free hours.

A review on each semester exam results were done and communicated with the students on how to improve the scores in the forthcoming exams and pointed out the flaws in their study method and exam writing pattern.

Students were encouraged to develop interest in academic, extracurricular and social works by suggesting them to participate in community extension programmes, various extra-curricular competitions etc

Regular Updates were given to the students regarding various scholarships, fellowships, internships, research projects, job opportunities, etc.

Identified the learning abilities of the students and suggested necessary steps to improve their learning skills. Peer group strategies were adopted so that slow learners can benefit from advanced learners in their group. This will also help the advance learners to enhance their skills through knowledge sharing.

Class duties were assigned to those hesitant students in order to make them more confident about themselves.

Discussions were also conducted with other colleagues regarding the academic progression as well as their responses of the students in the classroom.

Regularly communicated with the parents of each student and they were informed about the attendance, academic results, class room behaviour etc of their ward.

BSc Botany 2022-2025

Mentor: Nazeeba . N

No of students: 21

Provided support to the students in devising action plan considering their goal and capabilities.

Slow learners and advanced learners were identified on the basis of their academic performance. Weak students were given remedial coaching.

Many study materials including lecture notes, books, Pdf were circulated among students.

Conducted seminars and group discussions for developing communication skill and team work.

Conducted PTA meeting to discuss about the students' academic progress.

The issue like fear of examination was resolved by providing simple notes and explaining the pattern of question paper.

Ensured frequent visits of students to the library and utilization of the facilities there.

Proper guidance given to attend competitive PG entrance exams.

Encouraged the students to participate in various academic and co-curricular activities.

BSc. Botany and Biotechnology 2022-25

Mentor: Dr.Shabna, A.

The students of Semester III are mentored under the guidance of Dr. Shabna A. The semester III consist of 27 students, they are categorised into three groups viz Excellent, good and average students. Efforts are taken to improve the ability of weaker students by giving them small assignments, explaining the theory topics more clearly by making them perform practical sessions, asking them to conduct seminars on short topics etc. The parents of all the students are constantly contacted by the class mentor in order to update them on the performance of students. PTA meetings are also being conducted regularly. The students were also taken to the research fest held at University of Kerala, Karyavattom campus in order to give them an idea about the ongoing research areas in Biotechnology.

STUDENTS ACHEIVEMENTS 2023 – 2024

1. AMRITHA T P , (Batch 2023- 2026) secured bronze medal in the Kerala University inter-collegiate fencing competition

ALUMINI ACHIEVEMENTS 2023-2024

1. A.S JESMINA (Batch 2008-2011) was awarded PhD in Biological Science from (CSIR-NIIST)
2. ABDUL KHADER (Batch 2017-2020) got placed as the quality control (QC) specialist in the insulin development section BIOCON BIOLOGICS ,Bangalore
3. AATHITHYA AJIKUMAR (Batch 2018-2021) secured first rank in MSc Biotechnology from KUFOS, Kochi.

DEPARTMENT ACHIEVEMENTS

We have isolated and characterized three novel strains of bacteria in our lab and in association with NIMS Centre for Genomics on behalf of student's project under guidance of Mr. Shabeer Ahmed N which was approved by the NCBI.

Dr Anita S
Head, Department of Botany & Biotechnology
National College, Thiruvananthapuram

