Self-Assessment Report (SAR)

Undergraduate Engineering Programs

B. Tech (Biotechnology)

Graduate Attributes and Professional Competencies Version 4.0
(GAPC V4.0)

(TIER-I Institutions)

Submitted by:

DEPARTMENT OF BIOTECHNOLOGY
SCHOOL OF ENGINEERING AND TECHNOLOGY
GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)
(Established Vide Odisha Act 23 of 2018, Included by UGC, New Delhi, and Approved by AICTE, ICAR, INC, DSIR, New Delhi)
Gunupur - 765022, Dist.- Rayagada, Odisha, INDIA
www.giet.edu

Submitted to:

National Board of Accreditation

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(APRIL 2025)

SAR Contents

PART A: Institutional Information

1. Name and Address of the Institution:

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University)

At: Gobriguda, Po: Kharling, Taluk: Gunupur,

Gunupur, Dist.: Rayagada, Odisha, 765022

2. Type of the Institution: (Tick the applicable choice)

Institute of National Importance	☐
Deemed to be University	☐
University	☑
Autonomous	☐
Non-Autonomous (Affiliated)	☐
Any Other (Please specify*)	☐

*Provide Details: State Private University

Note:

- ❖ In case of Autonomous Institute/Deemed University, mention the year of grant of status by the authority. In case of autonomous institution, mention also the duration of status.
- ❖ In case of University Constituent Institution, please indicate the academic autonomy status of the Institution as defined in 12th Plan guidelines of UGC. Institute should apply for Tier 1 only when fully academically autonomous.

3. Year of Establishment of the Institution: 1997

4. Ownership Status: (Tick the applicable choice)

Central Government	☐
State Government	☐
Grant-in-Aid	☐
	☑

Self-financing Trust

Any Other (Please specify*) ☐

*Provide Details: Vidya Bharati Educational Trust

5. Name and Address of the Affiliating University (if any):

6. Other Academic Institutions Run by Trust/Society/etc., if any:

Table No. A6: List of all Institutions running under the same trust/society.

S. N.	Name of the Institution(s)	Year of Establishment	Programs of Study	Location
-	-	-	-	-

7. Details of all the Programs Being Offered by the Institution:

Table No. A7: Details of all the programs being offered by the Institution.

S. N.	Program Name	Year of start	Sanctioned Intake	Increase/ decrease in intake, if any	Year of increase/ decrease	AICTE/Approval details	Accreditation Status*	No. of times program accredited
1	Diploma (Civil Engineering)	2023	60	No	NA	File No.: Eastern/1-36589679860/2023/EOA Date: 18-Jun-2023	Not eligible for accreditation	0
2	Diploma (Electrical Engineering)	2023	12	No	NA	File No.: Eastern/1-36589679860/2023/EOA Date: 18-Jun-2023	Not eligible for accreditation	0
3	Diploma (Mechanical Engineering)	2023	120	No	NA	File No.: Eastern/1-36589679860/2023/EOA Date: 18-Jun-2023	Not eligible for accreditation	0
4	B. Tech (Chemical Engineering)	1997	40	30	2019	File No.: Eastern/2019-20/1-4561768721 Date: 30-Apr-2019	Granted accreditation for 2/3 years for the period (Academic Years 2014-15 to 2021-22, i.e., up to 30-06-2022)	3

5	B. Tech (Computer Science and Engineering)	1997	40	240	2019	File No.: Eastern/2019-20/1-4561768721 Date: 30-Apr-2019	Granted accreditation for 2/3 years for the period (Academic Years 2023-24 to 2025-26, i.e., up to 30-06-2026)	3
6	B. Tech (Mechanical Engineering)	1997	60	60	2021	File No.: Eastern/1-9319432457 /2021/EOA/ Corrigendum-1 Date: 04-Aug-2021	Granted accreditation for 2/3 years for the period (Academic Years 2023-24 to 2025-26, i.e., up to 30-06-2026)	4
7	B. Tech (Electronics and Communication Engineering)	2000	60	120	2021	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Granted accreditation for 2/3 years for the period (Academic Years 2019-20 to 2024-25, i.e., up to 30-06-2025)	1
8	B. Tech (Biotechnology)	2004	30	60	2021	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Granted accreditation for 2/3 years for the period (Academic Years 2019-20 to 2024-25, i.e., up to 30-06-2025)	1
9	B. Tech (Electrical and Electronics Engineering)	2007	60	60	2019	File No.: Eastern/2019-20/1-4561768721 Date: 30-Apr-2019	Granted accreditation for 2/3 years for the period (Academic Years 2018-19 to 2024-25, i.e., up to 30-06-2025)	1

10	B. Tech (Electrical Engineering)	2008	60	30	2021	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Eligible but not applied	0
11	B. Tech (Civil Engineering)	2009	60	60	2019	File No.: Eastern/2019-20/1-4561768721 Date: 30-Apr-2019	Eligible but not applied	0
12	B. Tech (Agricultural Engineering)	2019	60	No	NA	File No.: Eastern/2019-20/1-4561768721 Date: 30-Apr-2019	Eligible but not applied	0
13	B. Tech (Computer Science and Technology)	2019	120	60	2021	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Eligible but not applied	0
14	B. Tech (Petrochem and Petroleum Refinery Engineering)	2019	30	No	NA	File No.: Eastern/2019-20/1-4561768721 Date: 30-Apr-2019	Eligible but not applied	0
15	B. Tech (Computer Science and Engineering (Artificial Intelligence and Machine Learning))	2021	60	No	NA	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Not eligible for accreditation	0
16	B. Tech (Computer Science and Engineering (Data Science))	2021	60	No	NA	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Not eligible for accreditation	0
17	B. Tech (Computer Science and Engineering (Internet of Things))	2021	60	No	NA	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Not eligible for accreditation	0

18	B. Tech (Electronics Engineering (VLSI Design and Technology))	2023	60	No	NA	File No.: Eastern/1-36589679860/2023/EOA Date: 18-Jun-2023	Not eligible for accreditation	0
19	M. Tech (Computer Science and Engineering)	2004	18	No	NA	File No.: PG/ORI/M.TECH. /2004/CSE-0036 Date: 28-Jun-2024	Eligible but not applied	0
20	M. Tech (Electronics and Communication Engineering)	2006	18	No	NA	File No.: 760-82-217(E)/ET/97 Date: 26-Jun-2006	Eligible but not applied	0
21	M. Tech (Power Electronics)	2009	18	No	NA	File No.: AICTE/E&T/ENGG/ LATEST_ APPROVAL/ORI/2009-10 Date: 21-Jul-2009	Eligible but not applied	0
22	M. Tech (Heat Power and Thermal Engineering)	2010	18	No	NA	File No.: Eastern Region/1-7537381/2010/EOA Date: 23-Aug-2010	Eligible but not applied	0
23	M. Tech (Machine Design)	2010	18	No	NA	File No.: Eastern Region/1-7537381/2010/EOA Date: 23-Aug-2010	Eligible but not applied	0
24	M. Tech (Structural Engineering)	2013	18	No	NA	File No.: Eastern/1-1421719332/2013/EOA Date: 19-Mar-2013	Eligible but not applied	0
25	M. Tech (Biotechnology)	2019	18	No	NA	File No.: Eastern/2019-20/1-4561768721 Date: 30-Apr-2019	Eligible but not applied	0
26	M. Tech (Chemical Engineering)	2019	18	No	NA	File No.: Eastern/2019-20/1-4561768721 Date: 30-Apr-2019	Eligible but not applied	0
27	M. Tech (Manufacturing	2019	18	No	NA	File No.: Eastern/2019-20/1-4561768721	Eligible but not applied	0

	Technology)					Date: 30-Apr-2019		
28	M. Tech (Construction Technology and Management)	2021	18	No	NA	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Eligible but not applied	0
29	M. Tech (Electronics and Communication Engineering (VLSI Design))	2023	18	No	NA	File No.: Eastern/1-36589679860/2023/EOA Date: 18-Jun-2023	Not eligible for accreditation	0
30	MBA (General Management)	2001	60	120	2006	File No.: OR-01/MAP-MBA/2000 Date: 16-Jun-2006	Applying first time	0
31	Master of Computer Applications	2019	60	120	2021	File No.: Eastern/1-9319432457 /2021/EOA/Corrigendum-1 Date: 04-Aug-2021	Eligible but not applied	0
32	Bachelor of Hotel Management and Catering Technology	2024	60	No	NA	File No.: Eastern/1-43658032219/2024/EOA Date: 08-May-2024	Not eligible for accreditation	0
33	Bachelor of Business Administration (BBA)	2016	60	No	NA	File No.: Eastern/2024-25/1-44661481044 Date: 09-Oct-2024	NA	NA
34	Bachelor of Computer Applications (BCA)	2020	40	No	NA	File No.: Eastern/2024-25/1-44661481044 Date: 09-Oct-2024	NA	NA

Add rows as needed

*Write applicable one:

- ❖ Applying first time
- ❖ Granted accreditation for 2/3 years for the period (specify period)

- ❖ Granted accreditation for 5/6 years for the period (specify period)
- ❖ Not accredited (specify visit dates, year).
- ❖ Withdrawn (specify visit dates, year)
- ❖ Not eligible for accreditation.
- ❖ Eligible but not applied.

8. Programs to be Considered for Accreditation vide this Application:

Table No. A8.1: List of programs to be considered for accreditation.

S. N.	Name of the Department	Name of the Program
1	Biotechnology	B. Tech (Biotechnology)
2	Chemical Engineering	B. Tech (Chemical Engineering)
3	Electrical Engineering	B. Tech (Electrical and Electronics Engineering)
4	Electronics and Communication Engineering	B. Tech (Electronics and Communication Engineering)
5	Management	MBA (General Management)

Note:

❖ Keep a list of programs applying for NBA accreditation through this application.

Table No. A8.2: Allied Department(s) to the Department of the programs considered for accreditation as above.

S. N.	Name of the Department (in table no. A8.1)	Name of allied Departments/Cluster (for table no. A8.1)
1	Chemical Engineering	Petrochem and Petroleum Refinery Engineering
2	Electrical Engineering	Electrical and Electronics Engineering
3	Electronics and Communication Engineering	Electronics Engineering (VLSI Design and Technology)

Note:

❖ Keep a list of all allied departments/cluster programs with respect to Table No. A8.1.

❖ See the Allied Departments/Cluster programs information in Annexure-III.

9. Total Number of Faculty Members in Various Departments:

Table No. A9: No. of faculty members in various departments.

S. N.	Name of the Department	Number of faculty members in the Department (UG and PG)											
		CAY 2024-25				CAYm1 2023-24				CAYm2 2022-23			
		No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members	No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members	No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members
1	Basic Science and Humanities	10	12	36	58	9	14	36	59	8	14	35	57
2	Agricultural Engineering	1	1	10	12	1	1	11	13	1	1	11	13
3	Biotechnology	3	3	10	16	2	3	9	14	1	3	8	12
4	Chemical Engineering	1	4	10	15	1	4	10	15	1	4	10	15
5	Civil Engineering	4	4	10	18	4	4	11	19	4	4	11	19
6	Computer Science and Engineering	8	20	70	98	9	23	61	93	10	18	56	84
7	Electrical Engineering	3	4	19	26	3	4	19	26	4	4	18	26
8	Electronics and Communication Engineering	4	12	20	36	5	13	17	35	5	10	22	37
9	Mechanical Engineering	5	7	10	22	5	8	13	26	5	8	18	31

S. N.	Name of the Department	Number of faculty members in the Department (UG and PG)		
		CAY 2024-25	CAYm1 2023-24	CAYm2 2022-23

		No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members	No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members	No. of Professors	No. of Associate Professors	No. of Assistant Professors	Total faculty members
1	Management Studies	5	10	15	30	5	9	15	29	4	9	14	27
2	Computer Science and Applications	1	1	20	22	1	1	19	21	1	1	19	21

Note:

All the faculty whether regular or contractual (except part-time or hourly based), will be considered. All regular faculty members shall meet the AICTE qualifications and experience requirements.

The contractual faculty appointed with any terminology whatsoever, who have taught for 2 consecutive semesters with or without break between the 2 semesters in corresponding academic year on full-time basis shall be considered for the purpose of calculation in the faculty student ratio. However, following will be ensured in case of contractual faculty:

1. Shall have the AICTE prescribed qualifications and experience.
2. Shall be appointed on full time basis and worked for consecutive two semesters with or without break between the 2 semesters during the particular academic year under consideration.
3. Should have gone through an appropriate process of selection and the records of the same shall be made available to the visiting team during NBA visit.

A. Faculty members in the Department who do not have teaching, or practical loads, will not be counted.

B. Director/ Principal/ Dean/ other academic/administrative posts, who has teaching/ practical load in the Department will be counted.

C. Visiting faculty/adjunct faculty, who are working on hourly based faculty will not be counted.

CAY = Current Academic Year

CAYm1 = Current Academic Year Minus 1 = Current Assessment Year

CAYm2 = Current Academic Year Minus 2 = Current Assessment Year Minus 1.

10. Total Number of Engineering Students in Various Departments:

Table No. A.10: No. of engineering students in various departments.

S. N.	Name of the Department	Number of engineering students in the Department (UG and PG)		
		CAY 2024-25	CAYm1 2023-24	CAYm2 2022-23
1	Basic Science and Humanities	1020	1050	990
2	Agricultural Engineering	180	180	180
3	Biotechnology	219	189	157
4	Chemical Engineering	221	222	222
5	Civil Engineering	270	270	270
6	Computer Science and Engineering	1530	1418	1296
7	Electrical Engineering	331	362	397
8	Electronics and Communication Engineering	514	494	529
9	Mechanical Engineering	306	372	438

Note:

In case the institution is running programs other than engineering programs (UG and PG), a separate table giving similar details is to be included.

S. N.	Name of the Department	Number of engineering students in the Department (UG and PG)		
		CAY 2024-25	CAYm1 2023-24	CAYm2 2022-23
1	Management Studies	420	420	420
2	Computer Science and Applications	360	360	360

11. Vision of the Institution:

To be a **renowned and globally recognized university** giving importance to **academic excellence with the latest technology, research, innovation, and entrepreneurial attitude**.

12. Mission of the Institution:

- To **create an innovative and committed workforce** to cater to the **societal, environmental, and economic needs** of the nation.
- To **promote education and research globally** at par with **international standards**.
- To **prepare future leaders** with the **latest skills** befitting to become entrepreneurs or employable.
- To **support and uplift the meritorious students** of this tribal area to represent as **ambassadors** in all forums as a part of our **social responsibility**.

13. Contact Information of the Head of the Institution and NBA Coordinator:

A. Head of the Institution

❖ Name: Dr. N. V. Jagannadha Rao

❖ Designation: Registrar

❖ Mobile Number: (+91) 9437044170, 9668259219

❖ Email id: registrar@giet.edu

B. NBA Coordinator:

❖ Name: Dr. Ajit Kumar Patro

❖ Designation: Asst. Registrar (Academics)

❖ Mobile Number: (+91) 9437723635, 7008168454

❖ Email id: asst.registrar_acad@giet.edu

PART B: Criteria Summary

Name of the Program: _____

Title of the Degree: _____

Criteria No.	Name of the Criteria	Marks/ Weightage
Program Level Criteria		
1	Outcome-Based Curriculum	120
2	Outcome-Based Teaching Learning	120
3	Outcome-Based Assessment	120
4	Students' Performance	120
5	Faculty Information	100
6	Faculty Contributions	120
7	Facilities and Technical Support	100
8	Continuous Improvement	80
Institution Level Criteria		
9	Student Support and Governance	120
	Total Marks/Weights	**1000**

PART B: Program Level Criteria

Criterion 1: Outcome-based Curriculum (120)

1.1. Vision, Mission and Program Educational Objectives (PEOs) (35)

1.1.1. State the Vision and Mission of the Institute and the Department (05)

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University), (formerly known as Gandhi Institute of Engineering and Technology) was established by "Vidya Bharati Educational Trust," Gunupur, Odisha, India in the year 1997. Since inception, the Trust promotes Technical Education in India with a motto of providing Quality Education in a highly disciplined and conducive environment with International Standards. During the time of beginning the institution was Gandhi Institute of Engineering and Technology (GIET) which was affiliated to Biju Patnaik University of technology, Rourkela, Odisha. Then GIET became autonomous in 2017 and University (State self-finance University) in 2018. GIET University, Gunupur -A tranquil paradise, away from the noise & bustle of an urban area, surrounded by lush greenery and nestled in the beautiful foothills of eastern India. It is a beautiful, unique & ineffable place which exudes positive energy, spiritual epiphany, sense of serendipity and produces intellectual, cultural, social giants & academic leaders. GIET University is home to many national and international students. The campus boasts of modern marvel infrastructure with every construction equipped with the modern facilities. GIETU is a peaceful paradise, far away from the noise & bustle of an urban area. The GIETU campus is a high-tech oriented territory at par with the world's leading global educational institutions. GIET University is the perfect choice of students in terms of studies

and environment. It is strategically the perfect fit for the students who want to pursue world-class education in India. The campus is filled with acres of spectacular greenery and views of the hills around. In addition to excellent academics, GIETU also offers the students an abundant scope of recreational and outdoor activities to undergo overall development. NBA (National Board of Accreditation), Govt. of India accredited B. Tech branches for high quality technical education. NAAC (National Assessment and Accreditation Council, UGC, Govt. of India) will visit soon to GIET University for accreditation. GIET University is recognized by DSIR (Govt. of India) as an institution for Quality Research. In addition to that the university has established the prestigious Atal Community Innovation Centre (ACIC) by Niti Aayog of Government of India and BIRAC E-YUVA Centre at Department of Biotechnology.

Institute Vision and Mission

Institute Vision

To be a renowned and Globally Recognized University giving importance to academic excellence with latest technology, Research, Innovation and Entrepreneurial Attitude.

Institute Mission

M 1: To create innovative and committed work force to cater to the societal, environmental and economic needs of the Nation.

M 2: To promote Education and Research Globally at par with the international standards

M 3: To prepare the future leaders with latest skills befitting to become Entrepreneurs or Employable.

M 4: To support and uplift the meritorious students of this Tribal Area to represent as an ambassador in all forums as a part of our social responsibility.

Department Vision and Mission

Department Vision

The Department of Biotechnology is committed to achieve high standards in academic excellence through quality teaching with latest technology and translational research.

Department Mission

M 1: To adopt innovative teaching methodologies and practical oriented curriculum in order to fulfil the professional aspirations of students

M 2: To empower and encourage the students for product-oriented research for sustainable development of society.

M 3: To inculcate an ethical and moral values among the students to become a responsible citizen.

Consistency of Department Vision and Mission with Institute Vision and Mission

The Department was initiated in 2004 by starting a UG program (B.Tech. in Biotechnology) with an initial intake of 30 students in 2004 that was later increased to 60 in the year 2005. Now, the department is offering UG (B. Tech in Biotechnology), PG (M. Tech. in Biotechnology) and Ph.D. in Biotechnology program as a university. The B.Tech. Biotechnology program was accredited by NBA in 2019 for three years and then extended upto 2025 (**30.06.2025**).

The Departmental vision and mission show **perfect consistency** with the Vision and Mission of the Institute.

Table 1.1.1.1: Alignment of Departmental Vision and Mission with Institute Vision and Mission

Institute Vision	Department Vision	Common Key Words / Phrases	Consistency Remarks
To be a renowned and Globally Recognized University giving	The Department of Biotechnology is committed to achieve high	-Academic excellence - latest technology	Direct alignment is found with the phases **Academic** excellence,

importance to academic excellence with latest technology, Research, Innovation and Entrepreneurial Attitude.	standards in academic excellence through quality teaching with latest technology and translational research.	Research - Innovation - Entrepreneurial attitude	research and latest technology.
Institute Mission	**Department Mission**	**Common Key Words / Phrases**	**Consistency Remarks**
M 1: To create innovative and committed workforce to cater to the societal, environmental and economic needs of the Nation.	To adopt innovative teaching methodologies and practical oriented curriculum in order to fulfil the professional aspirations of students.	- Innovative professionals - Societal and environmental needs	The Department intentions to adopt an innovative, method of teaching and practical oriented curriculum to build workforce which directly supporting the Institute's mission.
M 2: To promote Education and Research Globally at par with the international standards."	To empower and encourage the students for product-oriented research for sustainable development of society.	- Research - Interdisciplinary approach	The Department's focus on promoting **interdisciplinary research and project work that meet** with the Institution mission.
M3: To prepare the future leaders with latest skills befitting	To inculcate an ethical and moral values among the	- Leadership - Entrepreneurial skills	The Department prioritizes ethical and moral values among

to become Entrepreneurs or Employable	students to become a responsible citizen.	- Employability	students which will create a perfect leadership and **entrepreneurship, leadership** fully in line with the mission.
M 4: To support and uplift the meritorious students of this Tribal Area to represent as an ambassador in all forums as a part of our social responsibility		- Upliftment - Societal responsibility	**This match with mission three (M 3) of the department partially.**

1.1.2. State PEOs of the Program (05)

The Program Educational Objectives (PEOs) of the UG Programme in Biotechnology Engineering are established through consultation with all the stake holders of the department. The following broader aspects were considered during the defining of PEOs as:

- What our graduates could do best after completion of study?
- How our graduates would approach to solve the problems with their skills?
- What will have strength of our graduates?
- How our graduates can be encouraged for entrepreneurship?

The Program Educational Objectives (PEOs) of the programme is

PEO-1: To provide teaching in applied biology with technological advancement and to ascertain competence in designing of new experiments, tools and techniques with social relevance in the field of Biotechnology and allied sciences.

PEO-2: To develop urge for advanced learning and to explore new areas of research in biotechnology to serve the society for sustainable development.

PEO-3: To encourage the students for lifelong learning, career enhancement and enable them to evolve as an entrepreneur with high ethical values.

1.1.3. Process of Defining Vision, Mission and PEOs (10)

1. Process of Defining Vision and Mission

The department's long-term goals and aspirations are outlined in the vision statement and short terms goals of mission.

Steps to followed to develop the Vision and mission Statement:

Step 1: Understanding the Institutional Vision & Mission

a) The department's goal must coincide with the overarching goal of the university
b) Analyse the institutional vision to determine key focus areas (e.g., research, innovation, societal impact, entrepreneurship).

Step 2: Involving Stakeholders

- Collected input from faculty, students, industry partners, alumni, and academicians.
- Conducted meetings, surveys and focus group discussions to understand their expectations.

Step 3: Drafting the Vision Statement

- The vision statements keep concise, aspirational, and forward-looking.
- Keeping in mind all aspects of the department prepared the final draft

Step 4: Review & Final Approval

At last review of the mission statement is done by

a) Head of the department,

b) All faculty members of the department, and

c) The Dean, School of Engineering and Technology (SoET)

Table 1.1: Stake holders and their relevance

Stakeholders	Relevance
Students	Primary beneficiaries from the programme as they get knowledge and skills, employability and self-sustainability. The aspirations and the expectations of the students are considered to design the programme.
Alumni	They are the interlink between the institute and the Industry/Society. Their feedback and suggestions help us to design and modify the programme curriculum as per the requirements of the industry.
Parents	The expectations of the parents facilitate the department to design the program to congregate their aspirations.
Academic organizations	Based on the requirement of several government organizations and their feedback is also considered to design the program curriculum.
Academia	The suggestions of eminent academia experts from reputed universities and/or organizations are considered in the design of the programme.
Industrial personnel	Feedback and opinion from scientist, engineers, managers and developers are appraised in the design of the programme.
BoS and Academic Council members	Faculty members and Board of studies members are regularly reviews the programme objectives and necessary steps have been taken to improve the curriculum.

With the analysed report, the department proposes the draft Vision and Mission statements. The draft document will be subjected to the deliberative process composing members from Board of Studies and followed by Academic council meeting. The deliberated Vision and Mission are then released for follow up.

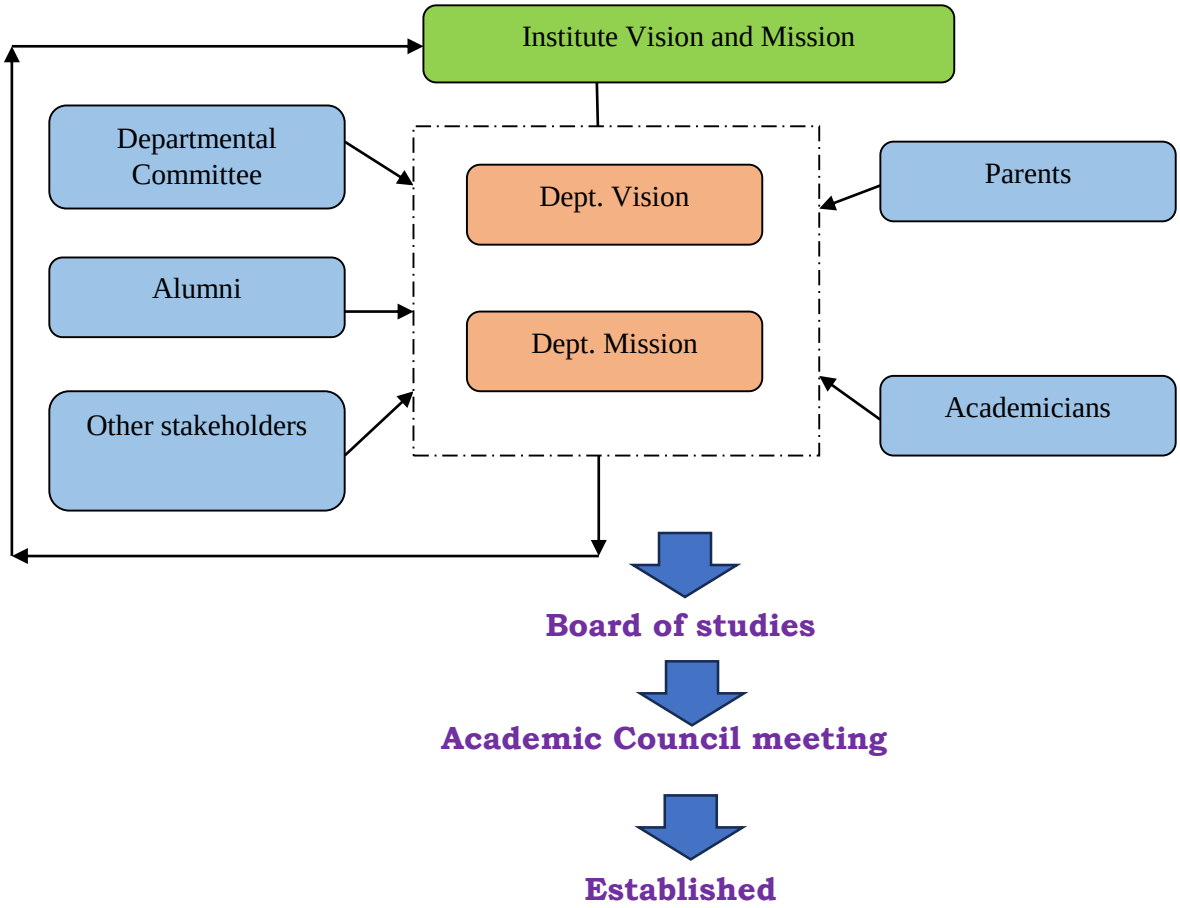


Fig. 1.1: Process for defining Vision and Mission

1.2. Defining Program Educational Objectives (PEOs)

PEOs are broad statements that outline the expected outcomes of graduates within a few years of finishing a program; they reflect the professional and career successes that graduates should achieve and are in line with the Institution's mission.

Key Characteristics of PEOs of the department:

1. The PEOs are broad and long-term goals typically achieved 3–5 years after graduation.
2. Focused on professional success, lifelong learning, and societal contribution.

3. All are aligned with stakeholders' expectations such as students, faculty, employers and industry
4. All PEOs are measurable and regularly reviewed for relevance

Steps followed to develop PEOs of the department:

Step 1: Analyse Institutional and Departmental Goals

a) Reviewed the institution's vision, mission, and curriculum structure.
b) Considered the national educational policies and accreditation requirements (e.g., Washington Accord and NBA).

Step 2: Stakeholders taken into accounts

a) Faculty & Curriculum Experts as Academic experts
b) Industry Representatives & Employers as workforce skills and competencies
c) Alumni & Students for Practical experiences and challenges

Step 3: Define the PEOs

Each of the department is designed in such a manner that they are broad and yet to be measurable.

So, we have expected that our graduate should be after successfully completion of the programme with following characters

a) Our Graduates will establish themselves in professional careers or pursue higher education.
b) Graduates will apply engineering principles to solve real-world problems.
c) Graduates will continuously improve their skills through advanced degrees, certifications, or research.
d) Graduates will contribute to society through ethical practices, leadership, and innovation.

Step 4: Validate & finalize the PEOs

To validate the PEOs of the department, the following processes are followed

- Departmental discussions have been made to refine the PEOs of the department.
- Approval is taken at BoS and then Academic Council.

Step 5: ***Implementation & Continuous Improvement***

The PEOs of the departments are published on the department's website, student handbooks, brochures, and academic documents. These are also displayed on notice boards, classrooms, and department offices.

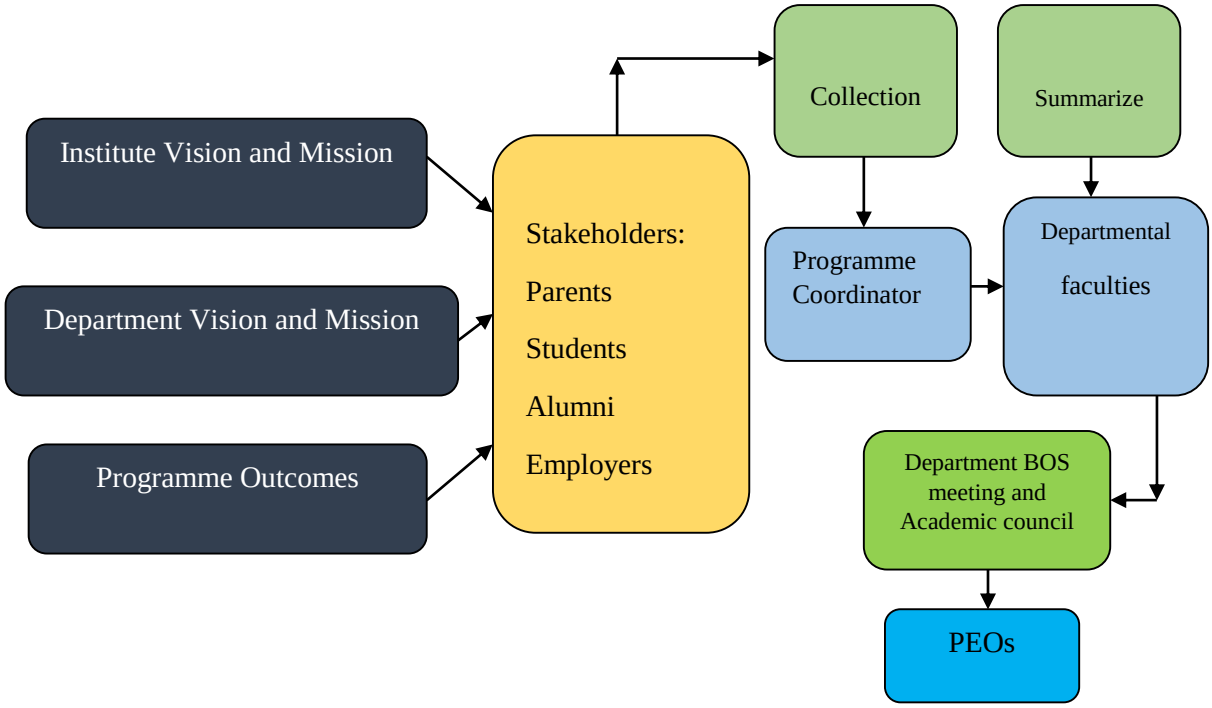


Fig. 1.2: Process of defining PEOs

1.1.4. Dissemination of Vision, Mission and PEOs (05)

All stakeholders are guaranteed to comprehend and contribute to the realization of the Vision, Mission, and PEOs through a well-organized distribution plan. Physical displays, digital platforms, academic activities, and stakeholder involvement are all integrated to provide a

holistic strategy for accreditation compliance and ongoing improvement. A variety of strategies, such as display boards, institutional events, digital platforms, and stakeholder participation, are employed to guarantee that both the institutional or our program's Vision, Mission, and PEOs are conveyed successfully.

A. Display and Physical Dissemination

1. ***Prominent Display in the Institution***
    - Vision, Mission, and PEOs are displayed at key locations of the institutions such as:
        - Main entrance of the institution
        - Administrative office
        - Department offices
        - Classrooms and laboratories
        - Library and student activity centres
        - Posters and banners with clear, readable content.
2. ***Inclusion in Academic Documents***
    - Printed in the student handbook, prospectus, and faculty handbook
    - Mentioned in the course curriculum and syllabus copies
3. ***Incorporation in Classrooms and Laboratories***
    - At the start of every semester, faculty members present the PEOs, Vision, and Mission.
    - Laboratory manuals and assignments align with the PEOs and are designed to reflect the institution’s goals.

B. Digital and Online Dissemination

1. ***Institutional Website***
    - The official website hosts the Vision, Mission, and PEOs on the homepage and department-specific pages
    - Dedicated sections provide further explanation and alignment with outcome-based education (OBE) principles

2. ***E-learning Platforms***
    - E-learning portals, such as google classroom, include Vision, Mission, and PEOs for student awareness.
    - Online orientation programs include modules covering these aspects.
3. ***Social Media and Email Communication***
    - Regular updates through LinkedIn, Facebook, Instagram, and Twitter posts.
    - Email circulars to faculty, students, and alumni

C. Dissemination through Stakeholder Engagement

1. ***Faculty and Staff Orientation Programs***
    - Regular faculty development programs (FDPs) include discussions on institutional goals.
    - Induction programs for new faculty ensure alignment with Vision, Mission, and PEOs.
2. ***Student Induction and Awareness Programs***
    - First-year student orientation includes a dedicated session on the institution's Vision, Mission, and PEOs.
    - Regular classroom discussions and counselling sessions reinforce these concepts.

3. ***Industry, funding agencies and Alumni Involvement***
    - Alumni meet, guest lectures, and industry interactions align with institutional goals.
    - Feedback is collected to ensure that PEOs remain relevant to industry and societal needs.
4. ***Parental visit to the department***
    - To keep parents aware and involved in the programme educational objectives, PEOs are discussed during Parental visit to the department

D. Assessment of Dissemination Effectiveness

1. **Surveys and Feedback Mechanisms**
    - Periodic student, faculty, alumni, and employer surveys assess awareness and understanding.
    - Feedback from stakeholders and industry partners ensures effectiveness.

1.1.5. Mapping of PEOs with Mission (10)

Table No.1.1.5.1: Mapping of PEOs with mission of the programme.

PEO statements	M 1	M 2	M 3
PEO-1: To provide teaching in applied biology with technological advancement and to ascertain competence in designing of new experiments, tools and techniques with social relevance in the field of Biotechnology and allied sciences	3	2	2
PEO-2: To develop urge for advanced learning and to explore new areas of research in biotechnology to serve the society for sustainable development.	2	2	2
PEO-3: To encourage the students for lifelong learning, career enhancement and enable them to evolve as an entrepreneur with high ethical values.	2	2	3

Note: Low (1), Medium (2) and High (3)

Consistency/Justification of Correlation Parameters between PEOs and Mission Statements

Table 1.1.5.2: Justification of PEOs with Mission

PEO \ Mission	Rating	Justification
PEO1 – M1	3	M1 focuses on innovative teaching methods and quality teachings for the students for better understanding PEO1 aligns strongly with technological advancement teaching to the graduates.
PEO1 – M2	3	M2 emphasizes product development research PEO1 ensures designing of new experiments in the subject.
PEO1 – M3	2	M3 addresses moral values of the students PEO1 moderately supports this with social relevance in the field of Biotechnology and allied sciences
PEO2 – M1	3	M1 states practical oriented curriculum PEO2 emphasizes on advanced learning and to explore new areas of research.
PEO2 – M2	2	M2 supports sustainable development PEO2 aligns with serve the society for sustainable development
PEO2 – M3	3	M3 involves to inculcate moral value among students PEO2 partially supports this through societal development
PEO3 – M1	3	M1 emphasizes fulfil the need of students PEO3 states to encourage the students for lifelong learning.
PEO3 – M2	3	M2 supports advance study of the students PEO3 aligns strongly through for lifelong learning and career enhancement

PEO3 – M3	2	M3 relates to become responsible citizen PEO3 quite relate to evolve as an entrepreneur with high ethical values. .

The Program Educational Objectives (PEOs) of a Biotechnology program are designed to closely align with the overarching mission of the programme, which typically emphasizes academic excellence, research innovation, and societal contribution. Biotechnology PEOs aim to produce graduates who are equipped with strong scientific knowledge, technical competence, and ethical values to address real-world biological challenges. This aligns with the mission of fostering an environment that encourages innovation, interdisciplinary learning, and a commitment to lifelong learning.

By emphasizing core competencies in biological sciences, engineering principles, and laboratory skills, the PEOs support the mission's goal of academic rigor. The integration of research-based projects and exposure to industrial practices fulfils the mission of promoting innovation and research excellence. Moreover, the focus on social responsibility, sustainability, and ethical practices aligns with the institution's commitment to community development and global relevance.

1.2. Curriculum Structure and Features (30)

1.2.1. State the Process for Developing/Revising the Program Curriculum (10)

The evolution of the biotechnology program curriculum is a structured and continuous process aligned with international benchmarks, such as the Washington Accord Knowledge and Attitude Profiles (WKs) (WKs), and national accreditation standards, such as the NBA-defined Program Outcomes (POs). The process ensures that the curriculum remains relevant, industry-oriented, and aligned with global best practices in education.

The Process for Developing/Revising the Program Curriculum consists of following phases:

***Phase 1: Creation of the Departmental Committee*:** The Head of Department and all faculty members develop the curriculum outline according to AICTE guidelines while consulting the

curricula of prestigious universities such as NITs, IITs, and international universities, among others. The department creates policies based on the NBA/AICTE criteria, the Institute's goal, and its vision.

Phase 2: Stakeholder Input & Data Collection: Collect feedback from faculty, students, industry experts, alumni, and employers.

Phase 3: Alignment with Outcome-Based Education (OBE): The curriculum is presented in Department Advisory Committee for the necessary changes are incorporated.

Phase 4: Analysis & Benchmarking: Compare with Washington Accord WKs, NBA POs, AICTE model curriculum, and other university syllabi.

Phase 5: Approval & Implementation: Discussed at Board of Studies (BoS) for appropriate of the content. The recommendations and modifications suggested by BOS members are incorporated in curriculum. Then the approval is made at academic council meeting of the university followed by implementation.

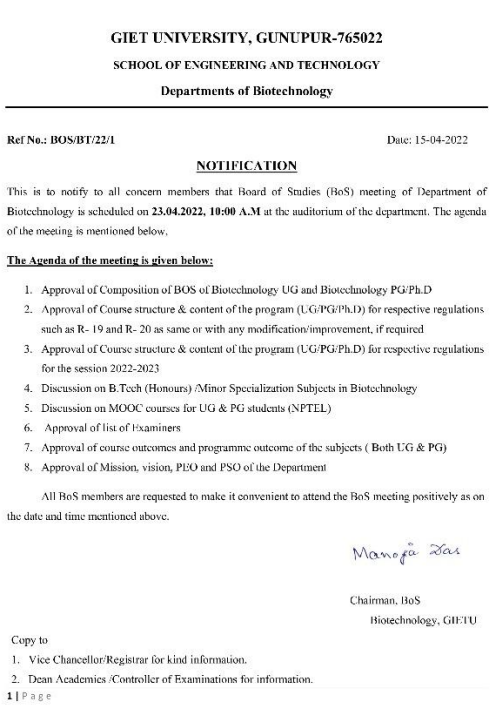
Phase 6: Monitoring & Outcome Assessment: Assess curriculum effectiveness and document improvements by students' performance, PO attainment and placement outcomes.

Stakeholder Engagement in Curriculum Evolution

The involvement of multiple stakeholders ensures a balanced and industry-oriented curriculum.

Stakeholder	Method of Data Collection	Purpose
Students	Course exit surveys, focus groups, feedback during classes	Understand learning difficulties, missing skills
Faculty	Faculty meetings, research-based curriculum enhancement	Identify knowledge gaps, update emerging topics

Industry & Employers	Employer surveys, industry advisory board meetings	Ensure industry-relevant skills and applications
Alumni	Alumni surveys, career progression tracking	Identify the need of improvements in curriculum



GIET UNIVERSITY, GUNUPUR-765022

SCHOOL OF ENGINEERING AND TECHNOLOGY

Departments of Biotechnology

Ref No.: BOS/BT/22/1 Date: 15-04-2022

NOTIFICATION

This is to notify to all concern members that Board of Studies (BoS) meeting of Department of Biotechnology is scheduled on **23.04.2022, 10:00 A.M** at the auditorium of the department. The agenda of the meeting is mentioned below,

The Agenda of the meeting is given below:

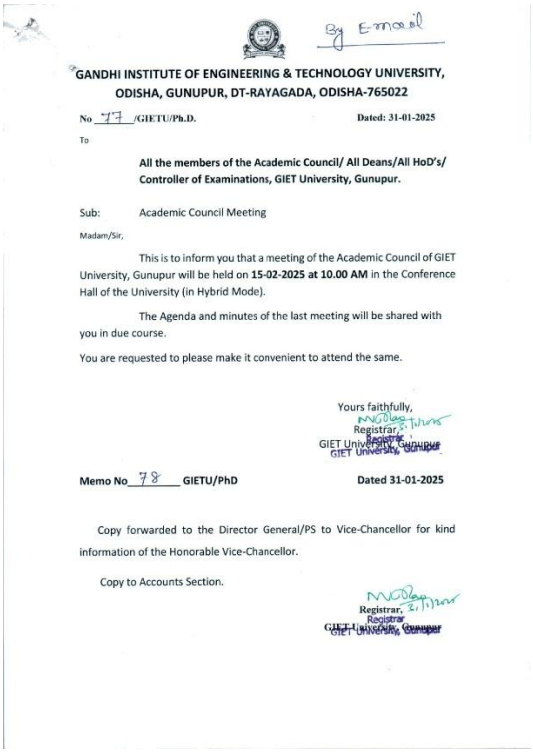
1. Approval of Composition of BOS of Biotechnology UG and Biotechnology PG/Ph.D
2. Approval of Course structure & content of the program (UG/PG/Ph.D) for respective regulations such as R- 19 and R- 20 as same or with any modification/improvement, if required
3. Approval of Course structure & content of the program (UG/PG/Ph.D) for respective regulations for the session 2022-2023
4. Discussion on B.Tech (Honours) /Minor Specialization Subjects in Biotechnology
5. Discussion on MOOC courses for UG & PG students (NPTEL)
6. Approval of list of Examiners
7. Approval of course outcomes and programme outcome of the subjects (Both UG & PG)
8. Approval of Mission, vision, PEO and PSO of the Department

All BoS members are requested to make it convenient to attend the BoS meeting positively as on the date and time mentioned above.

Chairman, BoS
Biotechnology, GIETU

Copy to
1. Vice Chancellor/Registrar for kind information.
2. Dean Academics /Controller of Examinations for information.

1 | Page



By Email

GANDHI INSTITUTE OF ENGINEERING & TECHNOLOGY UNIVERSITY,
ODISHA, GUNUPUR, DT-RAYAGADA, ODISHA-765022

No 77 /GIETU/Ph.D. Dated: 31-01-2025

To

All the members of the Academic Council/ All Deans/All HoD's/
Controller of Examinations, GIET University, Gunupur.

Sub: Academic Council Meeting

Madam/Sir,

This is to inform you that a meeting of the Academic Council of GIET University, Gunupur will be held on **15-02-2025 at 10.00 AM** in the Conference Hall of the University (in Hybrid Mode).

The Agenda and minutes of the last meeting will be shared with you in due course.

You are requested to please make it convenient to attend the same.

Yours faithfully,
Registrar
GIET University, Gunupur

Memo No 78 GIETU/PhD Dated 31-01-2025

Copy forwarded to the Director General/PS to Vice-Chancellor for kind information of the Honorable Vice-Chancellor.

Copy to Accounts Section.

Registrar,
GIET University, Gunupur

1.2.2. Curriculum Structure (10)

The curriculum structure of the **Biotechnology** program at **Gandhi Institute of Engineering and Technology University** follows the guidelines set by **AICTE** and are structured over a period of **8 semesters (4 years)**. The university has implemented its curriculum under different regulations, specifically **Regulation-19 (R-19)** and **Regulation-23 (R-23)**. The detailed semester-wise course structure and subjects are outlined in the respective regulation tables.

Table No.1.2.2.1: Details of various courses presented in terms of teaching and learning scheme.

A) Details of various courses presented in terms of teaching and learning scheme for Regulation-19 (R-19)

Sl no	Course Code	Course Titles	Classroom Instruction (CI) (in hours per semester)		P	Teaching & Learning Scheme Total Credit
			L	T		
1	C101	Engineering Mathematics-I	3	1	0	4
2	C102	Engineering Chemistry	3	0	0	3
3	C103	Basic of Mechanics	3	1	0	4
4	C 104	Programming for Problem Solving	2	0	0	2
5	C 105	Communicative English and Soft Skills	2	0	0	2
6	C 106	Engineering Chemistry Lab	0	0	1	1
7	C 107	Programming for problem solving lab	0	0	2	2
8	C 108	Communicative English and Soft Skills Lab	0	0	1	1
9	C 109	Engineering Workshop	0	0	2	2
10	C 110	Engineering Mathematics-II	3	1	0	4
11	C 111	Engineering Physics	3	0	0	3
12	C 112	Basics Electrical and electronics Engineering	3	0	0	3
13	C 113	Data Structure and Algorithm	2	0	0	2
14	C 114	Communicative English and Technical Communication	2	0	0	2
15	C 115	Engineering Physics Lab	0	0	1	1
16	C 116	Basics Electrical and electronics Engineering Lab	0	0	1	1
17	C 117	Data Structure and Algorithm Lab	0	0	2	2

18	C 118	Communicative English and Technical Communication Lab	0	0	1	1
19	C 129	Engineering Graphics and design Lab	0	0	2	2
20	C 120	Induction Program	0	0	0	0
21	C 201	Basic Biology	3	0	0	3
22	C 202	Biochemistry	3	0	0	3
23	C 203	Microbiology	3	0	0	3
24	C 204	Engineering Mathematics III	3	0	0	3
25	C 205	Object Oriented Programming using Java	3	0	0	3
26	C 206	Organizational Behavior	2	0	0	2
27	C 207	Biochemistry Lab	0	0	1	1
28	C 208	Microbiology Lab	0	0	1	1
29	C 209	Obejct Oriented Programming using Java Lab	0	0	1	1
30	C 210	Summer Internship I	0	0	1	1
31	C 211	Essence of Indian Traditional Knowledge	0	0	0	0
32	C 212	Molecular Biology	3	0	0	3
33	C 213	Biostatistics	3	0	0	3
34	C 214	Bio-analytical Techniques	3	0	0	3
35	C 215	Upstream Process Engineering	3	0	0	3
36	C 216	Fluid Mechanics and Hydraulic Machine	3	0	0	3
37	C 217	Engineering Economics and Costing	3	0	0	3
38	C 218	Molecular Biology Lab	0	0	1	1

39	C 219	Biostatistics Lab	0	0	1	1
40	C 220	Bio Analytical Lab	0	0	1	1
41	C 221	Upstream Process Engineering Lab	0	0	1	1
42	C 221	Minor Project I	0	0	1	1
43	C 222	Environmental Science	0	0	0	
44	C 301	Genetic Engineering and r-DNA Technology	3	0	0	3
45	C 302	Immunology and Immuno-technology	3	0	0	3
46	C 303	Biochemical Reaction Engineering	3	0	0	3
47	C 304	Bioreactor Design and Analysis	3	0	0	3
48	C 305	Industrial Microbiology and Enzyme Technology	3	0	0	3
49	C 306	Process Instrumentation	3	0	0	3
50	C 307	Human Values and Professional Ethics	2	0	0	2
51	C 308	Genetic Engineering and r-DNA Technology Lab	0	0	1	1
52	C 309	Immunology and Immuno-technology Lab	0	0	1	1
53	C 310	Bioreactor Design and Analysis Lab	0	0	1	1
54	C 311	Minor Project II	0	0	2	
55	C 312	Summer Internship II	0	0	1	1
56	C 313	Plant Biotechnology	3	0	0	3
57	C 314	Bioinformatics	3	0	0	3
58	C 315	Downstream Process Engineering	3	0	0	3

59	C 316	Environmental Biotechnology	3	0	0	3
60	C 317	Nano biotechnology	3	0	0	3
61	C 318	Optimization in Engineering	3	0	0	3
62	C 319	Dietetics and Nutrition	2	0	0	2
63	C 320	Plant Biotechnology Lab	0	0	1	1
64	C 321	Bioinformatics Lab	0	0	1	1
65	C 322	Minor Project III	0	0	2	2
66	C 401	Food Biotechnology	3	0	0	3
67	C 402	Medical and Pharmaceutical Biotechnology	3	0	0	3
68	C 403	Animal Biotechnology	3	0	0	3
69	C 404	Entrepreneurship Development	2	0	0	2
70	C 405	Summer Internship III	0	0	1	1
71	C 406	Major Project I	0	0	4	4
72	C 407	Protein Engineering	3	0	0	3
73	C 408	IPR, Bioethics and Biosafety	3	0	0	3
74	C 409	Biomedical Instrumentation	3	0	0	3
75	C 410	Major Project II	0	0	3	3
Total Credit						**164**

B) Details of various courses presented in terms of teaching and learning scheme for Regulation-23 (R-23)

Sl No.	Course Code	Course Titles	Teaching & Learning Scheme					
			Classroom Instruction (CI) (in hours per semester)		Lab Instruction (LI) (in hours per semester)	Term Work (TW) and Self Learning (SL) (TW+ SL) (in hours per semester)	Total no. of Hours per semester	Total Credits (C)* (Total Hours/30)
			L	T	P	SL		
1	C101	Engineering Mathematics-I	42	14	0	64	120	120/30=4
2	C 102	Engineering Chemistry	44	0	0	46	90	90/30=3
3	C 103	Elements of Mechanical Engineering	42	0	0	47	90	90/30=3
4	C 104	Programming for Problem Solving	32	0	0	28	60	60/30=2
5	C 105	Dietetics and Nutrition	28	0	0	32	60	60/30=2
6	C 106	Communicative English and Soft Skills	30	0	0	30	60	60/30=2
7	C 107	Engineering Workshop	12	0	0	18	30	30/30=1
8	C 108	Induction Program	-	-	-	0	0	0
9	C 109	Engineering Chemistry Lab	0	0	13	17	30	30/30=1
10	C 110	Elements of Mechanical Engineering Lab	0	0	14	16	30	30/30=1
11	C 111	Programming for Problem Solving Lab	0	0	12	18	30	30/30=1
12	C 112	Communicative English and Soft Skills Lab	0	0	13	17	30	30/30=1
13	C 113	Engineering Workshop Lab	0	0	12	18	30	30/30=1
14	C 114	Mathematics-II	46	14	0	60	120	120/30=4

15	C 115	Engineering Physics	44	0	0	46	90	90/30=3
16	C 116	Engineering Mechanics	42	0	0	48	90	90/30=3
17	C 117	Data Structure & Algorithms	33	0	0	27	60	60/30=2
18	C 118	English	31	0	0	29	60	60/30=2
19	C 119	Engineering Graphics & Design	17	0	0	13	30	30/30=1
20	C 120	NCC/NSS/Yoga	-	-	-	-	-	-
21	C 121	Engineering Physics Lab	0	0	12	18	30	30/30=1
22	C 122	Engineering Mechanics Lab	0	0	10	20	30	30/30=1
23	C 123	Data Structure & Algorithms Lab	0	0	13	17	30	30/30=1
24	C 124	English Lab	0	0	11	19	30	30/30=1
25	C 125	Engineering Graphics & Design Lab	0	0	13	17	30	30/30=1
26	C 201	Biochemistry	47	0	0	43	90	90/30=3
27	C 202	Microbiology	48	0	0	42	90	90/30=3
28	C 203	Fundamentals of Biology and Biotechnology	48	0	0	42	90	90/30=3
29	C 204	Object Oriented Programming using JAVA	47	0	0	43	90	90/30=3
30	C 205	Fluid Mechanics and Hydraulic Machine	45	15	0	60	120	120/30=4
31	C 206	English Learning - 01	18	0	0	12	30	30/30=1
32	C 207	Biochemistry Lab	0	0	14	16	30	30/30=1
33	C 208	Microbiology Lab	0	0	18	12	30	30/30=1
34	C 209	Object Oriented Programming using JAVA Lab	0	0	14	16	30	30/30=1
35	C 210	English Learning – 01 Lab	0	0	14	16	30	30/30=1
36	C 211	Summer Internship-1	0	0	15	15	30	30/30=1
37	C 212	Learning Project-1	0	0	13	17	30	30/30=1
38	C 213	Molecular Biology	48	0	0	42	90	90/30=3

39	C 214	Biostatistics	48	0	0	42	90	90/30=3
40	C 215	Upstream Process Engineering	46	0	0	44	90	90/30=3
41	C 216	Bio-analytical Techniques	48	0	0	42	90	90/30=3
42	C 217	Data Base Management System	44	0	0	46	90	90/30=3
43	C 218	English Learning -02	16	0	0	14	30	30/30=1
44	C 219	Molecular Biology Lab	0	0	18	12	30	30/30=1
45	C 220	Biostatistics Lab	0	0	14	12	30	30/30=1
46	C 221	Upstream Process Engineering Lab	0	0	13	17	30	30/30=1
47	C 222	English Learning -02 Lab	0	0	15	15	30	30/30=1
48	C 213	Learning Project-2	0	0	15	15	30	30/30=1
49	C 301	Genetic Engineering	48	0	0	42	90	90/30=3
50	C 302	Plant Biotechnology	50	0	0	40	90	90/30=3
51	C 303	Industrial Microbiology and Enzyme Technology	47	0	0	43	90	90/30=3
52	C 304	Bioreactor Design and Analysis	48	0	0	42	90	90/30=3
53	C 305	Biochemical Reaction Engineering	47	0	0	43	90	90/30=3
54	C 306	Organisational Behaviour	42	0	0	18	60	60/30=2
55	C 307	Genetic Engineering Lab	0	0	15	15	30	30/30=1
56	C 308	Plant Biotechnology Lab	0	0	14	16	30	30/30=1
57	C 309	Summer Intership-2	0	0	30	00	30	30/30=1
58	C 310	Minor Project-1	0	0	42	18	60	60/30=2
59	C 311	Constitution of India	0	0	0	0	0	0
60	C 312	Immunology and Immunotechnology	48	0	0	42	90	90/30=3
61	C 313	Bioinformatics	48	0	0	42	90	90/30=3
62	C 314	Environmental Biotechnology	50	0	0	40	90	90/30=3

63	C 315	Downstream Process Engineering	48	0	0	42	90	90/30=3
64	C 316	Optimization Engineering	46	0	0	44	90	90/30=3
65	C 317	Engineering Economics and Costing	42	0	0	18	60	60/30=2
66	C 318	Immunology and Immunotechnology Lab	0	0	16	14	30	30/30=1
67	C 319	Bioinformatics Lab	0	0	15	15	30	30/30=1
68	C 320	Minor Project-2	0	0	45	15	60	60/30=2
69	C 321	Essence of Indian Knowledge Tradition	0	0	0	0	0	0
70	C 401	Animal Biotechnology	48	10	0	62	120	120/30=4
71	C 402	Medical and Pharmaceutical Biotechnology	42	0	0	48	90	90/30=3
72	C 403	Food Biotechnology	48	0	0	42	90	90/30=3
73	C 404	Nanobiotechnology	48	0	0	42	90	90/30=3
74	C 405	Process Instrumentation	50	0	0	40	90	90/30=3
75	C 406	Summer Intership-3	0	0	30	00	30	30/30=1
76	C 407	Major Project-1	0	0	50	40	90	90/30=3
77	C 408	Protein Engineering	48	0	0	42	90	90/30=3
78	C 409	IPR,Bioethics and Biosafaty	50	0	0	40	90	90/30=3
79	C 410	Biomedical Instrumentation	47	0	0	43	90	90/30=3
80	C 411	Technical Seminar	0	0	20	10	30	30/30=1
81	C 412	Major Project-2	0	0	50	40	90	90/30=3

1.2.3. Components of Curriculum (05)

Regulation-19

Table No.1.3.3.1: Program curriculum grouping based on curriculum components.

Curriculum Component	**Curriculum Content (% of total number of credits of the program)**	**Total number of contact hours**	**Total number of credits**
Basic Sciences	12.2	600	20
Basic Engineering	18.3	900	30
Humanities and Social Sciences	9.1	450	15
Program Core	31.1	1530	51
Program Electives	11.1	540	18
Open Electives	9.1	450	15
Project(s)	7.3	360	12
Internships/Seminars	1.8	90	3
Any other (Please specify) MCS	0	0	0
		Total number of Credits:	**164**

Regulation-23

Table No.1.3.3.2: Program curriculum grouping based on curriculum components.

Curriculum Component	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Basic Sciences	9.14	450	15
Basic Engineering	20.12	990	33
Humanities and Social Sciences	6.10	300	10
Program Core	35.36	1740	58
Program Electives	9.15	450	15
Open Electives	7.32	360	12
Project(s)	7.93	390	13
Internships/Seminars	1.83	90	3
Management Course	3.05	150	5
Any other (Please specify) MCS	0	0	0
		Total number of Credits:	**164**

1.2.4. Strategies for Education Reforms (05)

The UG Biotechnology curriculum will incorporate courses from a variety of disciplines, including OOPS including JAVA, DBMS, bioinformatics, environmental engineering and safety, organization Behaviour, and Diet and nutrition, in order to promote a well-rounded education. Students can comprehend biotechnology ideas in the context of larger issues including social demands, ethics, and industries because to this interdisciplinary course. To develop multidisciplinary competency, for example, students can opt a course from bucket of courses for open electives. The curriculum has also incorporated case studies from industry, healthcare, and agriculture as well as project-based learning. In order to prepare students for a variety of occupations, collaboration with other departments is made to foster team-based, practical problem-solving and creativity. This shift reflects the progressive implementation of NEP 2020 principles, making the program more inclusive, dynamic, and future-ready. The Outcome-Based Education (OBE) pattern is used to develop the curriculum, which will link Course Outcomes (COs) with Program Outcomes (POs) and Program Specific Outcomes (PSOs). To assurance resemblance with the intended learning goals, each course will incorporate experiential activities including lab work, workshop, industry visit, and mini-projects.

Educational Reform	Implementation in Biotechnology	Details
Curriculum Modernization	Incorporate Emerging Fields	Include synthetic biology, bioinformatics, computational biology, systems biology, and pharmaceutical medicine.
	Interdisciplinary Integration:	Blend biotechnology with DBMS, environmental sciences, and OB
	Modular Structure.	Offer elective modules to let students specialize or diversify according to interests.

Industry-Academia Collaboration	Internships & Apprenticeships	Partner with biotech companies for real-world exposure.
	Guest Lectures & Workshops	Invite professionals for insights into trends and career paths.
Hands-on and Project-Based Learning	Lab-centric Training	Increase practical lab hours with access to modern equipment.
	Hackathons	Organize challenges to solve real biotech problems.
	Undergraduate Research Opportunities	Encourage independent or group research projects.
Entrepreneurial Ecosystem	Innovation & Startup Cells	Create incubators to support biotech student startups.
	Mentorship Programs	Connect students with biotech entrepreneurs and investors.
Flexible Assessment & Evaluation	Outcome-Based Education (OBE)	Focus on competencies and learning outcomes.
	Continuous Evaluation	Blend traditional exams with presentations, case studies, and peer assessments.

1.3. PO, PSO and their Mapping with Courses (20)

1.3.1. POs and PSOs (05)

(Program Specific Outcomes (PSOs) are defined by the program, with up to 3 PSOs specified.)

Program Outcomes (POs):

PO1: Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4).

PO3: Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with

consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5).

PO4: Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

PO5: Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6).

PO6: The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

PO7: Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9).

PO8: Individual and Collaborative Teamwork: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO9: Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences.

PO10: Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO11: Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8).

Program Specific Outcomes (PSO):

PSO-1: Acquire knowledge on principles and practices of basic and modern biotechnology for application in research and industry.

PSO-2: Identify, analyze, and offer biotechnological solutions to real-world problems in agriculture, food and the environment.

PSO-3: Engage in lifelong learning and explore entrepreneurial opportunities in the biotechnology sector, fostering innovation and societal development.

1.3.1. Mapping between the Courses and POs/PSOs (15)

1.3.2. Mapping between the Courses and POs/PSOs (15):

Each course is mapped to relevant **POs** (which are generic competencies like problem-solving, ethics, teamwork, communication, etc.) and **PSOs** (which are domain-specific competencies). This mapping helps in assessing how well a course contributes to achieving the overall educational objectives of the program. The mapping is typically represented in a **matrix format**, where each course is assigned a contribution level (Low, Medium, High) to different POs/PSOs based on the course content and learning objectives.

This structured approach ensures:

- Effective curriculum design and outcome-based education (OBE) implementation
- Continuous improvement in teaching-learning processes

Table No.1.3.2.2: Connection of courses with POs/PSOs for Regulation-19 (R-19)

Sl no	Course Code	Course Titles	POs	PSOs
1	C101	Engineering Mathematics-I	PO1, PO2	PSO1
2	C102	Engineering Chemistry	PO1, PO5	PSO2
3	C103	Basic of Mechanics	PO1, PO4	PSO1
4	C 104	Programming for Problem Solving	PO6, PO7	PSO3
5	C 105	Communicative English and Soft Skills	PO3, PO9	
6	C 106	Engineering Chemistry Lab	PO4	PSO2
7	C 107	Programming for problem solving lab	PO4	PSO3
8	C 108	Communicative English and Soft Skills Lab	PO6, PO9	PSO1
9	C 109	Engineering Workshop	PO3, PO9	
10	C 110	Engineering Mathematics-II	PO3	PSO1
11	C 111	Engineering Physics	PO1, PO2	PSO1
12	C 112	Basics Electrical and electronics Engineering	PO1, PO5	PSO2
13	C 113	Data Structure and Algorithm	PO1, PO2	PSO3
14	C 114	Communicative English and Technical Communication	PO5	PSO1
15	C 115	Engineering Physics Lab	PO3, PO9	
16	C 116	Basics Electrical and electronics Engineering Lab	PO4	PSO2
17	C 117	Data Structure and Algorithm Lab	PO5	PSO3
18	C 118	Communicative English and Technical Communication Lab	PO3, PO9	
19	C 129	Engineering Graphics and design Lab	PO4	PSO1

20	C 120	Induction Program	PO1, PO2	PSO1
21	C 201	Basic Biology	PO6	PSO1
22	C 202	Biochemistry	PO1, PO2, PO3	PSO1
23	C 203	Microbiology	PO1, PO2, PO3	PSO3
24	C 204	Engineering Mathematics III	PO1, PO2, PO4	PSO1
25	C 205	Object Oriented Programming using Java	PO7, PO8	
26	C 206	Organizational Behavior	PO1, PO6	PSO1
27	C 207	Biochemistry Lab	PO1, PO2, PO3	PSO1
28	C 208	Microbiology Lab	PO1, PO2, PO3	PSO3
29	C 209	Obejct Oriented Programming using Java Lab	PO1, PO9, PO12	
30	C 210	Summer Internship I	PO1, PO2, PO7	PSO1
31	C 211	Essence of Indian Traditional Knowledge	PO1, PO2, PO4	PSO1
32	C 212	Molecular Biology	PO1, PO2, PO4, PO5	PSO3
33	C 213	Biostatistics	PO1, PO2, PO4	PSO1
34	C 214	Bio-analytical Techniques	PO1, PO2, PO4, PO5	PSO1
35	C 215	Upstream Process Engineering	PO5, PO6, PO7,PO8, PO11	
36	C 216	Fluid Mechanics and Hydraulic Machine	PO1, PO2, PO4	PSO1
37	C 217	Engineering Economics and Costing	PO1, PO3, PO4	PSO1
38	C 218	Molecular Biology Lab	PO1, PO2, PO3, PO4	PSO3
39	C 219	Biostatistics Lab	PO1, PO2, PO4	PSO1
40	C 220	Bio Analytical Lab	PO1, PO2, PO9	
41	C 221	Upstream Process Engineering Lab	PO1, PO2, PO6, PO7	PSO2
42	C 221	Minor Project I	PO1, PO2, PO3, PO8	PSO2
43	C 222	Environmental Science	PO1, PO2, PO4, PO5	PSO2
44	C 301	Genetic Engineering and r-DNA Technology	PO1, PO2, PO3	PSO2

45	C 302	Immunology and Immuno- technology	PO7, PO8, PO12	
46	C 303	Biochemical Reaction Engineering	PO1, PO5, PO12	PSO2
47	C 304	Bioreactor Design and Analysis	PO6, PO8, PO10	
48	C 305	Industrial Microbiology and Enzyme Technology	PO1, PO2, PO4	PSO3
49	C 306	Process Instrumentation	PO1, PO3, PO4	PSO2
50	C 307	Human Values and Professional Ethics	PO1, PO4, PO5	PSO2
51	C 308	Genetic Engineering and r-DNA Technology Lab	PO1, PO2, PO4	PSO2
52	C 309	Immunology and Immuno- technology Lab	PO1, PO3, PO4	PSO2
53	C 310	Bioreactor Design and Analysis Lab	PO1, PO4, PO5	PSO3
54	C 311	Minor Project II	PO1, PO9, PO12	
55	C 312	Summer Internship II	PO1, PO2, PO9	
56	C 313	Plant Biotechnology	PO3, PO5	PSO2
57	C 314	Bioinformatics	PO2, PO4, PO5	PSO2
58	C 315	Downstream Process Engineering	PO1, PO2, PO4	PSO2
59	C 316	Environmental Biotechnology	PO1, PO3, PO5	PSO3
60	C 317	Nano biotechnology	PO1, PO7	PSO2
61	C 318	Optimization in Engineering	PO1, PO2	PSO1
62	C 319	Dietetics and Nutrition	PO6, PO7, PO8	
63	C 320	Plant Biotechnology Lab	PO1, PO2, PO4	PSO2
64	C 321	Bioinformatics Lab	PO1, PO3, PO4	PSO3
65	C 322	Minor Project III	PO1, PO2, PO9	
66	C 401	Food Biotechnology	PO1, PO2, PO5	PSO2
67	C 402	Medical and Pharmaceutical Biotechnology	PO5, PO6, PO8	

68	C 403	Animal Biotechnology	PO3, PO6, PO10	
69	C 404	Entrepreneurship Development	PO6, PO7, PO8, PO10, PO11, PO12	PSO3
70	C 405	Summer Internship III	PO1, PO9, PO12	
71	C 406	Major Project I	PO9, PO12	PSO3
72	C 407	Protein Engineering	PO7, PO8	PSO1
73	C 408	IPR, Bioethics and Biosafety	PO1, PO2, PO5	PSO2
74	C 409	Biomedical Instrumentation	PO1, PO2, PO4	PSO2
75	C 410	Major Project II	PO3, PO4, PO9, PO11, PO12	PSO3

Table No.1.3.2.2: Connection of courses with POs/PSOs for Regulation-23 (R-23)

Sl No.	Course Code	Course Titles	POs	PSOs
1	C101	Engineering Mathematics-I	PO1, PO2, PO4, PO10	PSO1
2	C 102	Engineering Chemistry	PO1, PO3, PO6, PO11	PSO2
3	C 103	Elements of Mechanical Engineering	PO1, PO2, PO4, PO10	PSO1
4	C 104	Programming for Problem Solving	PO4, PO5, PO10	PSO1
5	C 105	Dietetics and Nutrition	PO1, PO2, PO3, P	
6	C 106	Communicative English and Soft Skills	PO6, PO8	
7	C 107	Engineering Workshop	PO1, PO2, PO4	PSO2
8	C 108	Induction Program	PO5, PO6, PO9	PSO1
9	C 109	Engineering Chemistry Lab	PO1, PO3, PO9	
10	C 110	Elements of Mechanical Engineering Lab	PO3, PO4, PO10	PSO1

11	C 111	Programming for Problem Solving Lab	PO1, PO2, PO10	PSO1
12	C 112	Communicative English and Soft Skills Lab	PO1, PO3, PO4	PSO2
13	C 113	Engineering Workshop Lab	PO1, PO2, PO4, PO5	PSO1
14	C 114	Mathematics-II	PO2, PO5	PSO1
15	C 115	Engineering Physics	PO3, PO6, PO7, PO8	
16	C 116	Engineering Mechanics	PO1, PO3, PO9	
17	C 117	Data Structure & Algorithms	PO1, PO2, PO4	PSO2
18	C 118	English	PO2, PO5	PSO1
19	C 119	Engineering Graphics & Design	PO2, PO3, PO4	PSO1
20	C 120	NCC/NSS/Yoga	PO1, PO3, PO4	PSO2
21	C 121	Engineering Physics Lab	PO3, PO9	
22	C 122	Engineering Mechanics Lab	PO1, PO2, , PO11	PSO1
23	C 123	Data Structure & Algorithms Lab	PO1, PO5, PO6	PSO1
24	C 124	English Lab	PO1, PO4, PO6	PSO2
25	C 125	Engineering Graphics & Design Lab	PO1, PO2 , PO3, PO5	PSO1
26	C 201	Biochemistry	PO1, PO2	PSO1
27	C 202	Microbiology	PO3, PO6	
28	C 203	Fundamentals of Biology and Biotechnology	PO3, PO5, PO6	PSO1
29	C 204	Object Oriented Programming using JAVA	PO1, PO4	PSO1
30	C 205	Fluid Mechanics and Hydraulic Machine	PO1, PO4	PSO1
31	C 206	English Learning - 01	PO3, PO6, PO7	PSO1
32	C 207	Biochemistry Lab	PO6, PO7, PO9	
33	C 208	Microbiology Lab	PO5, PO6	PSO1
34	C 209	Object Oriented Programming using JAVA Lab	PO1, PO2 , PO3, PO4	PSO2

35	C 210	English Learning – 01 Lab	PO1, PO2 , PO3, PO4,	PSO2
36	C 211	Summer Internship-1	PO1, PO2 , PO3, PO5, PO6	PSO1
37	C 212	Learning Project-1	PO1, PO2, PO4, PO10, PO11	PSO1
38	C 213	Molecular Biology	PO7, PO8	
39	C 214	Biostatistics	PO1, PO2, PO4	PSO1
40	C 215	Upstream Process Engineering	PO1, PO3, PO4, PO6	PSO1
41	C 216	Bio-analytical Techniques	PO1, PO2, PO4	PSO1
42	C 217	Data Base Management System	PO7, PO8	
43	C 218	English Learning -02	PO2, PO5, PO6, PO7, PO8, PO9	
44	C 219	Molecular Biology Lab	PO1, PO3 , PO5, PO6, PO11	PSO2
45	C 220	Biostatistics Lab	PO1, PO4, PO5, PO6	PSO2
46	C 221	Upstream Process Engineering Lab	PO1, PO2 , PO3, PO4, PO5	PSO2
47	C 222	English Learning -02 Lab	PO1, PO2 , PO3, , PO8, PO11	PSO2
48	C 213	Learning Project-2	PO1, PO4, PO5, PO6	PSO1
49	C 301	Genetic Engineering	PO1, PO4, PO5, PO6	0
50	C 302	Plant Biotechnology	PO1, PO4, PO5, PO6	PSO1
51	C 303	Industrial Microbiology and Enzyme Technology	PO1, PO2, PO6	
52	C 304	Bioreactor Design and Analysis	PO6, PO7, PO8	
53	C 305	Biochemical Reaction Engineering	PO1, PO2, PO4	PSO2
54	C 306	Organisational Behaviour	PO1, PO3, PO4	PSO2
55	C 307	Genetic Engineering Lab	PO1, PO2 , PO3, PO11	PSO2
56	C 308	Plant Biotechnology Lab	PO6, PO7, PO9	
57	C 309	Summer Intership-2	PO2, PO5, PO6, PO7, PO8, PO9	
58	C 310	Minor Project-1	PO3, PO5	PSO2

59	C 311	Constitution of India	PO2, PO4	PSO3
60	C 312	Immunology and Immunotechnology	PO1, PO4, PO5, PO6	PSO2
61	C 313	Bioinformatics	PO1, PO2, PO4, PO5	PSO2
62	C 314	Environmental Biotechnology	PO1, PO2 , PO3	PSO3
63	C 315	Downstream Process Engineering	PO1, PO2 , PO3	PSO2
64	C 316	Optimization Engineering	PO1, PO4, PO5, PO6	
65	C 317	Engineering Economics and Costing	PO1, PO2 , PO3	PSO3
66	C 318	Immunology and Immunotechnology Lab	PO1,PO6	
67	C 319	Bioinformatics Lab	PO6, PO7, PO8, PO10	
68	C 320	Minor Project-2	PO1, PO3, PO4	PSO2
69	C 321	Essence of Indian Knowledge Tradition	PO1, PO2 , PO3, PO4, PO6, PO11	PSO3
70	C 401	Animal Biotechnology	PO2, PO5, PO6, PO7, PO8, PO9	
71	C 402	Medical and Pharmaceutical Biotechnology	PO1, PO2 , PO3, PO4, PO11	PSO2
72	C 403	Food Biotechnology	PO1, PO2 , PO3, PO6,PO11	PSO2
73	C 404	Nanobiotechnology	PO1, PO2, PO5, PO8	PSO2
74	C 405	Process Instrumentation	PO5, PO8	PSO3
75	C 406	Summer Intership-3	PO1, PO2, PO7, PO9, PO11	
76	C 407	Major Project-1	PO1, PO2, PO7, PO9, PO11	PSO2
77	C 408	Protein Engineering	PO6, PO7, PO9, PO11	
78	C 409	IPR,Bioethics and Biosafaty	PO1,PO2, PO10, PO12	PSO2
79	C 410	Biomedical Instrumentation	PO2, PO5, PO6	PSO1
80	C 411	Technical Seminar	PO1,PO2, PO10, PO12	PSO2
81	C 412	Major Project-2	PO1,PO2, PO6, PO7, PO9, PO11	PSO3

1.4. Course Outcomes and Course Articulation Matrix (30)

1.4.1. Course Outcome (Semester Wise) (15)

Table No. 1.4.1.1: Course outcomes.

Semester No:	01		
Course Title:	Engineering Mathematics-I	**Course Code:**	101
Course Outcome No.	**Course Outcome Statement**		
CO1	Implement the engineering problems using the concept of Partial differentiation and series and to understand its application.		
CO2	Solve the initial value and boundary value problem of ODE related to SHM, Electrical circuit, Growth and Decay problem etc.		
CO3	Execute the technique of Fourier series for learning advanced Engineering Mathematics.		
CO4	Relate the tools of matrices and linear algebra including linear transformations, eigen values, diagonalization and orthogonalization in Engineering.		

Semester No:	01		
Course Title:	Engineering Chemistry	**Course Code:**	102
Course Outcome No.	**Course Outcome Statement**		
CO1	Identify suitable water treatments techniques for domestic and industrial		

	purposes
CO2	Differentiate various types of corrosion, and gain knowledge on control measures associated with corrosion
CO3	Classify the different types of fuel, it's analysis and gain knowledge on fractional distillation of petroleum.
CO4	Understand various types of polymers, their preparation along with applications

Semester No:	02		
Course Title:	Engineering Mathematics-II	**Course Code:**	110
Course Outcome No.	**Course Outcome Statement**		
CO1	Solve Ordinary differential and partial differential equation by using Laplace transform and its application in Network theory, wave equation etc		
CO2	Execute the technique of Fourier Integral and transform for learning in advanced Engineering Mathematics		
CO3	Relate gradient, curl and divergence and its application in electromagnetic theory		
CO4	Evaluate multiple integrals by using Green's, Stokes' and divergence theorem to give physical interpretation of the curl and divergence of a vector field		

Semester No:	02		
Course Title:	Engineering Physics	**Course Code:**	111
Course Outcome	**Course Outcome Statement**		

No.	
CO1	Solve engineering problems using the concept of oscillation and wave mechanics and recognize the scientific application of Laser.
CO2	To analysis the structural properties of elemental solids
CO3	Determine gradient of scalar field, divergence and curl of vector fields and solve engineering problems on electromagnetism
CO4	Construct a quantum mechanical model to explain the behavior of a system at microscopic level.

Semester No:	03		
Course Title:	Biochemistry	**Course Code:**	202
Course Outcome No.	**Course Outcome Statement**		
CO1	Obtain knowledge about the structure/function of biomolecules such as Carbohydrates, Proteins, Amino acids and Lipids.		
CO2	Learn the basic structure of nucleic acidsandprinciple of bioenergetics.		
CO3	Demonstrate the fundamentals of biochemical principles such as cellular metabolism, metabolic pathways and the regulation of biological/biochemical processes.		
CO4	understand the different types of enzymes, hormones, vitamins, minerals and their functions.		

Semester No:	03		
Course Title:	Microbiology	**Course Code:**	203
Course Outcome No.	**Course Outcome Statement**		

CO1	Gain the knowledge about classifications, culture and identification of important microorganisms.
CO2	Understand the microbial growth, reproduction and process of nitrogen fixation.
CO3	Obtain the knowledge about food microbiology, human pathogens and their life cycle.
CO4	Learn about the antibiotics and microbiology of different environment.

Semester No:	04		
Course Title:	Molecular Biology	**Course Code:**	212
Course Outcome No.	**Course Outcome Statement**		
CO1	understand the organization and complexity of genome.		
CO2	understand the mechanism of DNA replication, DNA repair and DNA recombination.		
CO3	emphasize the molecular mechanism of transcription, protein synthesis and gene regulation in various organisms.		
CO4	articulate applications of molecular biology in the modern world.		

Semester No:	04		
Course Title:	Biostatistics	**Course Code:**	213
Course Outcome No.	**Course Outcome Statement**		
CO1	Get the concept on biological variables		
CO2	learn the technique of analysis of data		
CO3	have an idea about the distribution of data in natural condition		
CO4	Design of experiment and draw samples without any biasness		

Semester No:	05

Course Title:	Genetic Engineering and r-DNA Technology	**Course Code:**	301
Course Outcome No.	**Course Outcome Statement**		
CO1	obtain knowledge in digestion of DNA, vector system for cloning and expression.		
CO2	understand the cloning strategies and expression of recombinant molecules		
CO3	aware of gene, genome sequencing and DNA finger printing techniques.		
CO4	acquire knowledge in molecular markers, genome mapping and apply genetic engineering principles for biotechnological and biomedical applications.		

Semester No:	05		
Course Title:	Immunology and Immuno-technology	**Course Code:**	302
Course Outcome No.	**Course Outcome Statement**		
CO1	Obtain knowledge in immunology, the structure and function of lymphoid organs and cells.		
CO2	Have knowledge in Major histocompatibility, antibody diversityand complement response in the blood.		
CO3	understand immune response,hypersensitive reactions, and organ transplantations and also obtain knowledge in various auto immune diseases.		
CO4	Know in the development of vaccines and immunological techniques.		

Semester No:	06		
Course Title:	Plant Biotechnology	**Course Code:**	313
Course Outcome No.	**Course Outcome Statement**		
CO1	acquire knowledge in various types of plant tissue culture		

	techniques and various components of plant tissue culture media, e.g. minerals, growth factors and hormones.
CO2	understand the importance of Micro propagation and somatic hybridization.
CO3	learn the technology of plant transformation including vector and vector less gene transfer methods.
CO4	acquire knowledge in biosynthesis of plant primary and secondary metabolites and their importance.

Semester No:	06		
Course Title:	Bioinformatics	**Course Code:**	314
Course Outcome No.	**Course Outcome Statement**		
CO1	understand and analyze the concept of use of various biological databases.		
CO2	analysis of various algorithms for structural study of dna & protein.		
CO3	design different molecular modeling using software.		
CO4	develop of different computational program for drug design.		

Semester No:	07		
Course Title:	Food Biotechnology	**Course Code:**	401
Course Outcome No.	**Course Outcome Statement**		
CO1	understand the composition of major food products, analysis of food quality and food production technology.		
CO2	understand the role of beneficial enzymes in food processing and preservation.		
CO3	understand the causes of food spoilage and technology used to control or destroy microorganism commonly found in food.		

CO4	understand the role of beneficial microorganisms in food processing and preservation.

Semester No:	07		
Course Title:	Medical and Pharmaceutical Biotechnology	**Course Code:**	402
Course Outcome No.	**Course Outcome Statement**		
CO1	understand the drug development in pharmaceutical process		
CO2	understand the recent disease and diagnosis and their therapy		
CO3	learn about the role of proteomics assay in drug development		
CO4	know about the control of different pharmaceutical products.		

Semester No:	08		
Course Title:	Protein Engineering	**Course Code:**	407
Course Outcome No.	**Course Outcome Statement**		
CO1	Gain the knowledge about different forces acting on protein structure interactions and proeinenginnering applications.		
CO2	Know thermodynamic and chemical principle of proteins		
CO3	Have the knowledge in the features, design principles and approaches of protein engineering with stabilization.		
CO4	understand the biophysical techniques used in protein characterization.		

Semester No:	08		
Course Title:	IPR, Bioethics and Biosafety	**Course Code:**	408
Course Outcome No.	**Course Outcome Statement**		
CO1	Student will understand the basics of intellectual property rights and its importance		

CO2	Students will obtain knowledge in patent requirements; patent writing and patenting procedure.
CO3	Students will understand the professional responsibilities for biosafety, biosafety levels, international agreements and protocols for Biosafety.
CO4	Students will understand the social and ethical issues related to plant, animal and modern biotechnology.

Regulation 23:

Semester No:	01		
Course Title:	Engineering Mathematics-I	**Course Code:**	101
Course Outcome No.	**Course Outcome Statement**		
CO1	implement the engineering problems using the concept of partial differentiation and series and to understand its application.		
CO2	solve the initial value and boundary value problem of ode related to sham, electrical circuit.		
CO3	execute the technique of fourier series for learning advanced engineering mathematics.		
CO4	relate the tools of matrices and linear algebra including linear transformations, eigen values, diagonalization and orthogonalization in engineering.		
CO5	apply the mathematical knowledge in engineering		
CO6	solve the problem of ode related to growth and decay problem etc		

Semester No:	01		
Course Title:	Engineering Chemistry	**Course Code:**	102

Course Outcome No.	**Course Outcome Statement**
CO1	Apply the principles of atomic and molecular structure, including quantum mechanics and molecular orbital theory
CO2	Investigate water treatment techniques for domestic and industrial purposes.
CO3	Analyze boiler feed water problems such as scale formation, sludge formation, and caustic embrittlement and their prevention methods.
CO4	Describe electrochemical principles, including electrode potentials, electrochemical cells and buffer solutions
CO5	Identify types of corrosion and methods for corrosion control and prevention.
CO6	Describe the classification, properties, and applications of various polymers, including applications in modern technology.

Semester No:	02		
Course Title:	Mathematics-II	**Course Code:**	114
Course Outcome No.	**Course Outcome Statement**		
CO1	Formulate and solve partial differential equations to model and analyse engineering phenomena like waves, heat, and fluid flow.		
CO2	Examine sequences and series for their behaviour, and apply power series techniques to resolve engineering differential equations.		
CO3	Utilize Laplace Transforms to simplify analysis and solve equations in systems like circuits and dynamic processes.		
CO4	Evaluate multiple integrals and employ vector calculus concepts to address engineering challenges in field analysis and design.		
CO5	Compute line, surface, and volume integrals, and apply fundamental theorems to solve problems in fluid and energy systems.		
CO6	Integrate mathematical tools and demonstrate proficiency in		

	solving complex, real-world engineering challenges.

Semester No:	02		
Course Title:	Engineering Physics	**Course Code:**	115
Course Outcome No.	**Course Outcome Statement**		
CO1	Understand the fundamental concepts of oscillatory motion and analyze simple harmonic motion in various physical systems.		
CO2	Explore the principles and characteristics of wave mechanics including interference, diffraction, and polarization of waves.		
CO3	Describe the working principle of lasers and analyze the conditions for lasing action.		
CO4	Explain the structure and function of optoelectronic devices and their role in modern communication systems.		
CO5	Understand the basic concepts of crystal structures and classify materials based on crystal symmetry and bonding.		
CO6	Apply the principles of X-ray diffraction to determine crystal structures and interpret Bragg's law.		

Semester No:	03		
Course Title:	Biochemistry	**Course Code:**	201
Course Outcome No.	**Course Outcome Statement**		
CO1	Obtain knowledge about the structure and functions of biomolecules such as Carbohydrates, Proteins, Amino acids and Lipids.		
CO2	Learn the basic structure of nucleic acids and principle of bioenergetics.		

CO3	Understand the hormones, vitamins, minerals and their functions.
CO4	Understand the fundamentals of biochemical principles such as cellular metabolism and metabolic pathways.
CO5	Know the regulations of biological/biochemical Processes of cell.
CO6	Acquire the knowledge on concept of enzymes and its regulation.

Semester No:	03		
Course Title:	Microbiology	**Course Code:**	202
Course Outcome No.	**Course Outcome Statement**		
CO1	Gain the knowledge about classifications, culture and identification of important microorganisms.		
CO2	Understand the microbial growth, reproduction and process of nitrogen fixation.		
CO3	Obtain the knowledge about food microbiology, human pathogens and their life cycle.		
CO4	Learn about the importance and types of antibiotics.		
CO5	Acquire the knowledge on medical microbiology.		
CO6	Understand the microbiology of environment.		

Semester No:	04		
Course Title:	Molecular Biology	**Course Code:**	213
Course Outcome No.	**Course Outcome Statement**		
CO1	Understand the organization and complexity of genome.		
CO2	Explore the mechanism of DNA replication, DNA repair and DNA recombination.		
CO3	Know the molecular mechanism of transcription and processing of m-RNA.		
CO4	Understand the protein synthesis and gene regulations.		
CO5	Acquire the knowledge on silencing of genes		

CO6	Articulate applications of molecular biology in the modern world.

Semester No:	04		
Course Title:	Biostatistics	**Course Code:**	214
Course Outcome No.	**Course Outcome Statement**		
CO1	Know the biological variables and their representation in various forms.		
CO2	Analyse the data with Bio statistical tools.		
CO3	Know the concept and theoretical probability.		
CO4	Have an idea about the theoretical distribution of data in natural condition		
CO5	Design of experiments and draw samples without any biasness		
CO6	Learn about the test of significance and their importance		

Semester No:	05		
Course Title:	Genetic Engineering	**Course Code:**	301
Course Outcome No.	**Course Outcome Statement**		
CO1	Obtain knowledge in digestion of DNA, vector system for cloning and expression.		
CO2	Understand the cloning strategies and library construction		
CO3	Knowledge on different techniques used in genome analysis.		
CO4	Understand the mechanism of silencing of gene		
CO5	Acquire knowledge in molecular markers, genome mapping.		
CO6	Apply genetic engineering principles for biotechnological and biomedical applications.		

Semester No:	05		
Course Title:	Plant Biotechnology	**Course Code:**	302
Course Outcome No.	**Course Outcome Statement**		
CO1	Acquire knowledge in various types of plant tissue culture techniques		

	and various components of plant tissue culture media
CO2	Understand the importance of micro propagation and somatic hybridization.
CO3	Learn the technology of plant transformation including vector and vector less gene transfer methods.
CO4	Know the importance of germplasm and their conservation techniques
CO5	Have idea on importance of genetically modified crops
CO6	Know the biosynthesis of plant primary and secondary metabolites and their importance

Semester No:	06		
Course Title:	Immunology and Immunotechnology	**Course Code:**	312
Course Outcome No.	**Course Outcome Statement**		
CO1	Understand the mechanisms by which our body elicits immune response.		
CO2	Able to demonstrate humoral and cellular immune mechanism		
CO3	Evaluate the usefulness of immunological techniques in different disease diagnosis.		
CO4	Interpret the immune response with respect to hypersensitive, organ transplantations and Auto-immunity.		
CO5	Acquired knowledge on the immune response to explain the mechanisms involved in immune system alterations and to comprehend the function of vaccines and immunotherapy.		
CO6	Apply the acquired knowledge on the immune response to explain defense mechanisms against infectious agents and tumors.		

Semester No:	06

Course Title:	Bioinformatics	**Course Code:**	313
Course Outcome No.	**Course Outcome Statement**		
CO1	understand and analyze the concept of use of various biological databases.		
CO2	analysis of various algorithms for structural study of dna & protein.		
CO3	design different molecular modeling using software.		
CO4	develop of different computational program for drug design.		
CO5	do the sequencing the various macromolecules and docking		
CO6	have affinity of various ligands and its importance		

Semester No:	07		
Course Title:	Animal Biotechnology	**Course Code:**	401
Course Outcome No.	**Course Outcome Statement**		
CO1	Understand the basics of animal cell culture and culture conditions.		
CO2	To learn the basic concept in each area of Animal Biotechnology		
CO3	Know in optimization of media, scaling up animal cell culture, characterization and maintenance of cell lines.		
CO4	To learn the future prospect of the Animal Biotechnology.		
CO5	understand the stem cell culture and its applications in tissue engineering and animal cloning.		
CO6	Do the cytotoxicity test on various cell lines		

Semester No:	07

Course Title:	Environmental Biotechnology	**Course Code:**	402
Course Outcome No.	**Course Outcome Statement**		
CO1	have the basic knowledge in environmental pollution and source of pollution.		
CO2	Learn about biological treatment of waste water by using different microbes.		
CO3	Understand the types of xenobiotic compounds, their adverse effect on environment and their remediation by using microbes and plants.		
CO4	Gain the idea about bio-oxidation, bioleaching and bioconversion of waste into value added products.		
CO5	Acquire knowledge about the concept of clean technology.		
CO6	Understand the use of basic microbiological techniques for product development and environmental sustainability.		

Semester No:	08		
Course Title:	Protein Engineering	**Course Code:**	408
Course Outcome No.	**Course Outcome Statement**		
CO1	Gain the knowledge about different forces acting on protein structure interactions and protein engineering applications.		
CO2	Know thermodynamic and chemical principle of proteins		
CO3	Have the knowledge in the features, design principles of protein.		
CO4	Understand the computational approaches of protein engineering.		
CO5	Gain the knowledge on techniques of stabilization protein		
CO6	Understand the biophysical techniques used in protein characterization.		

Semester No:	08		
Course Title:	IPR, Bioethics and Biosafaty	**Course Code:**	409
Course Outcome No.	**Course Outcome Statement**		
CO1	Distinguish and explain various forms of IPRs and responsibilities of holder of Patent, Copyright, Trademark, Industrial Design etc		
CO2	Identify criteria to fit one's own intellectual work in particular form of IPRs.		
CO3	Identify procedure to protect different forms of IPRs national and international level.		
CO4	Understand the professional responsibilities to maintain biosafety.		
CO5	Students will understand the social and ethical issues related to plant, animal and modern biotechnology.		
CO6	Design various types of paten and copyright		

1.4.2. Course Articulation Matrix (15)

Table No.1.4.2: Course articulation matrix.

Regulation 2019

Course Name: Engineering Mathematics-I **Course Code: 101**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO- 11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	2	2	1										2	2	
CO-2	2	2				1									
CO-3	2	2											1		
CO-4	2	2											2	2	1

Course Name: Engineering Chemistry **Course Code: 102**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1			2			1	2						1	2	
CO-2			2			1	2					1			
CO-3			2			1	2						2		1
CO-4			1			1	1					1	1	2	

Course Name: Engineering Mathematics-II **Course Code: 110**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO-12	PSO-2	PSO-3
CO-1	2	2										1		1
CO-2	2	2											2	2
CO-3	2	2											1	1
CO-4	2	2										1		1

Course Name: Engineering Physics II **Course Code: 111**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	2	1											1		1
CO-2	1	1													
CO-3	2	1													2
CO-4	1	1											3		

Course Name: Biochemistry **Course Code: 202**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO- 1	PO -2	PO -3	PO- 4	PO- 5	PO -6	PO -7	PO -8	PO -9	PO- 10	PO- 11	PO -12	PSO-1	PSO -2	PSO-3
CO-1	3	-	1	2	-	-	-	-	-	-	-	-	1	2	
CO-2	1	2	1	1	-	-	-	-	-	-	-	-		2	
CO-3	2	-	2	3	-	-	-	-	-	-	-	1	3		2
CO-4	2	1	-	2	1	-	-	-	-	-	-	-	1		3

Course Name: Microbiology **Course Code: 203**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO- 1	PO -2	PO -3	PO- 4	PO- 5	PO -6	PO -7	PO -8	PO -9	PO- 10	PO- 11	PO- 12	PSO- 1	PSO -2	PSO -3
CO-1	3	-	2	1	-	-	2	-	-	-	-	-	3	1	2
CO-2	2	-	2	2	-	-	-	-	-	-	-	1	1	2	2
CO-3	1	2	-	1	1	-	-	-	-	-	-	-			
CO-4	2	-	-	-	2	-	2	2	-	-	-	-	2	3	1

Course Name: Molecular Biology **Course Code: 212**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO- 1	PO -2	PO -3	PO- 4	PO- 5	PO -6	PO -7	PO -8	PO -9	PO- 10	PO- 11	PO- 12	PSO- 1	PSO -2	PSO -3

CO-1	2	-	1	2	-	-	-	-	-	-	-	-	3		2
CO-2	3	2	2	1	-	-	-	-	-	-	-	-			3
CO-3	2	-	2	3	-	-	-	-	-	-	-	2		2	
CO-4	1	2	1	2	-	-	-	-	1	-	-	-	1	3	

Course Name: Biostatistics **Course Code: 213**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**												**Program Specific Outcomes (PSOs)**		
	PO- 1	**PO -2**	**PO -3**	**PO- 4**	**PO- 5**	**PO -6**	**PO -7**	**PO -8**	**PO -9**	**PO- 10**	**PO- 11**	**PO- 12**	**PSO- 1**	**PS O -2**	**PS O -3**
CO-1	2	1	2	-	3	-	-	-	-	-	-	-	2	2	2
CO-2	2	2	-	3	-	-	-	-	-	-	-	1	2		
CO-3	3	-	2	2	1	-	-	-	-	-	-	-	3	2	1
CO-4	1	2	2	1	-	-	-	-	-	-	-	-	1	3	3

Course Name: Genetic Engineering and r-DNA Technology **Course Code: 301**

Course Name: Immunology and Immunotechnology **Course Code: 302**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**												**Program Specific Outcomes (PSOs)**		
	PO- 1	**PO -2**	**PO -3**	**PO- 4**	**PO- 5**	**PO -6**	**PO -7**	**PO -8**	**PO -9**	**PO- 10**	**PO- 11**	**PO- 12**	**PSO- 1**	**PS O -2**	**PS O -3**
CO-1	1			2	1								1	3	3
CO-2	-	1	2	-	3	-	-	-	-	-	-	-	3	2	1
CO-3	-	-	3	-	1	-	1	-	-	-	-	-	2	3	
CO-4	2	-	-	1	-	1	-	-	-	-	-	2	2		2
		-	-	-	3	-	2	-	-	-	-	1	3		2

Course Name: Plant Biotechnology **Course Code: 313**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO- 1	PO -2	PO -3	PO- 4	PO- 5	PO -6	PO -7	PO -8	PO -9	PO- 10	PO- 11	PO- 12	PSO- 1	PSO- 2	PS O - 3
CO-1	1	-	-	2	2	-	1	-	-	-	-	-	3	2	
CO-2	-	-	1	2	1	-	-	-	1	-	-	-	3		3
CO-3	-	2	3	2	-	-	-	-	-	-	-	1	2	2	
CO-4	-	-	2	2	1	-	2	2	-	-	-	-	2	3	2

Course Name: Bioinformatics **Course Code: 314**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO- 1	PO -2	PO -3	PO- 4	PO- 5	PO -6	PO -7	PO -8	PO -9	PO- 10	PO- 11	PO- 12	PS O - 1	PSO- 2	PS O - 3
CO-1	2	1	2	-	3	-	-	-	-	-	-	-	2	2	
CO-2	2	2	-	3	-	-	-	-	-	-	-	1			3
CO-3	-	-	2	2	1	-	-	-	-	-	-	-		3	
CO-4	-	2	2	1	3	-	-	-	-	-	-	-	2		

Course Name: Food Biotechnology **Course Code:401**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO- 1	PO -2	PO -3	PO- 4	PO- 5	PO -6	PO -7	PO -8	PO -9	PO- 10	PO- 11	PO- 12	PS O - 1	PSO- 2	PS O - 3

CO-1	1	-	-	2	1	1	-	-	-	-	-	-	2		3
CO-2	-	2	1	-	2	2	-	-	-	-	-	-		3	2
CO-3	-	-	-	1	3	2	-	-	-	-	-	1		2	
CO-4	-	1	-	2	-	1	2	-	-	-	-	-	3	2	

Course Name: Medical and Pharmaceutical Biotechnology **Course Code:402**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**												**Program Specific Outcomes (PSOs)**		
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PO-12**	**PSO- 1**	**PSO-2**	**PSO-3**
CO-1	2	-	2	1	-	-	-	-	-	-	-	-	2		
CO-2	-	-	2	3	1	1	-	-	-	-	-	-		2	
CO-3	-	3	2	-	2	-	-	-	-	-	-	2			3
CO-4	-	-	-	2	-	3	2	1	-	-	-	-			2

Course Name: Protein Engineering **Course Code:407**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**												**Program Specific Outcomes (PSOs)**		
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PO 12**	**PSO- 1**	**PSO-2**	**PSO-3**
CO-1	1	-	2	1	2	-	-	-	-		-	-	2		
CO-2	2	1	2	2	-	-	-	-	-	-	-	-		2	
CO-3	-	2	1	3	2	-	-	-	-	-	-	-			3
CO-4	-	-	2	1	3	-	-	-	-	-	-	1		3	

Course Name: IPR, Bioethics and Biosafety **Course Code: 408**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)												Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	2	-	2	1	2	-	-	-	-		-	-		3	2
CO-2	1	2	2	3	-	-	-	-	-	-	-	-			2
CO-3	-	1	2	1	2	-	-	-	-	-	-	-	2	3	
CO-4	-	-	2	2	-	-	-	3	-	-	-	2		2	

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Course Name: Engineering Mathematics-I **Course Code:101**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO-1	PSO-2	PSO-3
CO-1	2	2										2		3
CO-2	2	2												
CO-3	2	2										3	2	3
CO-4	2	2											3	
CO-5	2	2										3	2	
CO-6	2	2												3

Course Name: Engineering Chemistry **Course Code:102**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO-1	PSO-2	PSO-3
CO-1			2			1	2					2		3
CO-2			2			1	2					3	2	
CO-3			2			1	2							3
CO-4			1			1	1					3	3	
CO-5			1		1		2							3
CO-6			2		1		2							2

Course Name: Engineering Mathematics-II **Course Code:114**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO- 1	PSO-2	PSO-3
CO-1	2	2										3		2
CO-2	2	2											2	3
CO-3	2	2											2	
CO-4	2	2											3	2
CO-5	1	2												3
CO-6	1	2												2

Course Name: Engineering Physics **Course Code:115**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO- 1	PSO-2	PSO-3

CO-1	2	1										2		3
CO-2	1												3	2
CO-3	2	1										3		
CO-4	1													3
CO-5	1	2		2									2	
CO-6		2											3	

Course Name: Biochemistry **Course Code: 201**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**											**Program Specific Outcomes (PSOs)**		
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PSO- 1**	**PSO-2**	**PSO-3**
CO-1	3	2	1	-	-	-	-	-	-	-	-	2	1	-
CO-2	1	2	1		-	-	-	-	-	-	-	1	1	-
CO-3	2		2	2	-	-	-	-	-	-	1	-	-	-
CO-4	2	1	1	1	-	-	-	-	-	-	-	1	-	-
CO-5	3	2	1	-	-	-	-	-	-	-	1	1	1	-
CO-6	2		2	1	-	-	-	-	-	-	1	1	2	1

Course Name: Microbiology **Course Code:202**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**											**Program Specific Outcomes (PSOs)**		
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PSO- 1**	**PSO-2**	**PSO-3**
CO-1	3	-	2	1	-	-	-	-	-	-	2	2		-
CO-2	2	-	2	2	-	-	-	-	-	-	1		1	-
CO-3	1	2	-	1	1	-	-	-	-	-	-	2		2
CO-4	2	-	-	-	2	-	-	-	-	-	-		2	-
CO-5	3	2	1	2	2	-	-	-	-	-	-		3	2
CO-6	3	1	1	1	1	-	-	-	-	-	1	2	3	-

Course Name: Molecular Biology **Course Code:213**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO-1	PSO-2	PSO-3
CO-1	3	2	1	-	-	-	-	-	-	-	2	2	1	-
CO-2	2	2		1	-	-	-	-	-	-		1	2	-
CO-3	2	2	2		-	-	-	-	-	-	1	-	-	-
CO-4	2		1	1	-	-	-	-	-	-			-	3
CO-5	2	2	1	-	-	-	-	-	-	-	2	2	1	-
CO-6	3	1	3		-	-	-	-	-	-		1	2	3

Course Name: Biostatistics **Course Code:214**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO-1	PSO-2	PSO-3
CO-1	2	1	2	-	-	-	-	-	-	-	-	1	2	3
CO-2	2	2	-	-	-	-	-	-	-	-	1	1		
CO-3	-	-	3	-	-	-	-	-	-	-	-	2	3	
CO-4	1	2	2	-	-	-	-	-	-	-	-		1	2
CO-5	-	1										1	2	
CO-6	2	2	3									1	2	3

Course Name: Genetic Engineering **Course Code:301**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO-1	PSO-2	PSO-3
CO-1	1	-	-	2	1	-	-	-	-	-	-	2	1	3

CO-2	-	1	2	2	3	-	-	1	-	-	-	2	2	2
CO-3	-	-	3	2	1	-	-	-	-	-	-		3	1
CO-4	2	-	-	1	-	-	2	-	-	-	2	3		
CO-5	3	2	2	1	2	-	-	-	-	-	-	1		2
CO-6	1	2	1	1	2	-	-	-	-	-	-			1

Course Name: Plant Biotechnology **Course Code:302**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**											**Program Specific Outcomes (PSOs)**		
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PSO- 1**	**PSO-2**	**PSO-3**
CO-1	2	2	1										2	2
CO-2	1	3			2							1		2
CO-3	1	2	2									2	1	
CO-4	-	2		2								1	2	3
CO-5	2	1	2								1	-	1	2
CO-6	2	-		2								3	-	1

Course Name: Immunology and Immunotechnology **Course Code:312**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**											**Program Specific Outcomes (PSOs)**		
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PSO- 1**	**PSO-2**	**PSO-3**
CO-1	3	-	2	1	-	-	-	-	-	-	2	2	1	-
CO-2	2	-	2	2	-	-	-	-	-	-	1	1	2	-
CO-3	1	2	-	1	1	-	-	-	-	-	-	1	1	2
CO-4	2	-	-	-	2	-	-	-	-	-	-	3	2	-
CO-5	3	2	1	2	2	-	-	-	-	-	-		3	2
CO-6	3	1	1	1	1	-	-	-	-	-	1		3	-

Course Name: Bioinformatics **Course Code: 313**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO- 1	PSO-2	PSO-3
CO-1	2	1	1	-	-	-	-	-	-	-	-		1	
CO-2	2	2	1	1	-	-	2	-	-	-		1	3	
CO-3	3	1	1	2	-	-	-	-	-	-	2	-	-	-
CO-4	3	2	1	2	-	-	-	-	-	-	-		-	-
CO-5	2	3	1	-	-	-		-	-	-	-	2	3	-
CO-6	2	2	2	2	-	-	-	-	-	-	2	1	2	2

Course Name: Animal Biotechnology **Course Code: 401**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO- 1	PSO-2	PSO-3
CO-1	2	-	1	1	-	2	-	-	-	-	-	2	1	3
CO-2	3	1	2	2	1	-	-	-	-	-	-	1	2	1
CO-3	-	2	2	3	2	-	-	-	-	-	2		1	2
CO-4	-	-	-	1	2	-	2	1	-	-	-	2		1
CO-5	1	1	1	-	1	-	-	-	-	-	2	1	2	
CO-6	1	2	1	-	1	-	-	-	-	-	-	2	3	2

Course Name: Environmental Biotechnology **Course Code:402**

Course Outcomes (COs) code & Statement	Program Outcomes (POs)											Program Specific Outcomes (PSOs)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PSO- 1	PSO-2	PSO-3
CO-1	2	2	3	1	1	1	3	-	-	-	-	2	3	
CO-2	1	2	3	1	2	2	3	-	-	-	2	3		3
CO-3	1	2	3	2		1	3	-	-	-	-	3		1
CO-4	1		3	1	2	2	2	-	-	1	-		3	

CO-5	1	2	2		2	2						3	1	
CO-6	1	2	2	2	1	2	2					3		1

Course Name: Protein Engineering **Course Code: 408**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**											**Program Specific Outcomes (PSOs)**		
	PO-1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PSO-1**	**PSO-2**	**PSO-3**
CO-1	1	-	2	1	2	-	-	-	-		-	2	1	3
CO-2	2	1	2	2	-	-	-	-	-	-	-	1	2	
CO-3	-	2	1	3	2	-	-	-	-	-	2			2
CO-4	-	-	2	1	3	-	-	-	-	-	1	2	1	
CO-5	2	1	1	2	-	-	-	-	-	-	-		2	3
CO-6	1	2	2	1	1	-	-	-	-	-	-	2	3	2

Course Name: IPR, Bioethics and Biosafety **Course Code:409**

Course Outcomes (COs) code & Statement	**Program Outcomes (POs)**											**Program Specific Outcomes (PSOs)**		
	PO- 1	**PO-2**	**PO-3**	**PO-4**	**PO-5**	**PO-6**	**PO-7**	**PO-8**	**PO-9**	**PO-10**	**PO-11**	**PSO-1**	**PSO-2**	**PSO-3**
CO-1	2	-	-	1	2	3	-	-	-		-	2	1	3
CO-2	-	-	2	-	-	3		-	-	-	-	1	2	
CO-3	-	-	1	-	-	3	2	-	1	-	-		1	2
CO-4	2	-	-	2	-	-		3	1	-	2	2		1
CO-5	-	-	-	-	-	1	2		-	-	-		2	1
CO-6	-	1	-	2	3	-	-	-	-	-	1	2	3	2

1: Slight (Low) ; 2: Moderate (Medium) ; 3: Substantial (High)

1.5. Program Articulation Matrix (05)

Table No.1.5.1: Program articulation matrix for Regulation-19 (R-19)

Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
101	Engineering Mathematics-I	2	2								1	1.25	1			
102	Engineering Chemistry			1.75			1	1.75							1.2	
103	Basic of Mechanics	2	1.75							1		1				1.6
104	Programming for Problem Solving		2		2			2								
105	Communicative English and Soft Skills				1	1.25		1		2					1.2	
106	Engineering Chemistry Lab			1.75			1.75		2		2		2			1.5
107	Programming for problem solving lab		1			2		2.4			2.4					
108	Communicative English and Soft Skills Lab			2	2	2.4					2				1.5	
109	Engineering Workshop	2		1.25									2			1.5
110	Engineering Mathematics-II	2	2					1		2.4						
111	Engineering Physics	1.5	1													
112	Basics Electrical and electronics Engineering		2			2		2					1			
113	Data Structure and Algorithm	2.6	2					1								
114	Communicative English and Technical Communication	2									2		2			
115	Engineering Physics Lab	2	1.25													
116	Basics Electrical and electronics Engineering Lab			1.25				1.5					2			

117	Data Structure and Algorithm Lab	2	1			1.25									
118	Communicative English and Technical Communication Lab	2	1.25			1						2		2.4	
129	Engineering Graphics and design Lab	2		2				1				2			2.4	
120	Induction Program		1				1.25								
201	Basic Biology	1.25	2	1.5	1	2	1.25	2	1	1.25	1	1	2	1.5		
202	Biochemistry	2.4	2.4	1.5	2		2	1		1		2		1	2	1.5
203	Microbiology	2.4	2.4	1	1	1.25	1	1	2	1	1.5					2.4
204	Engineering Mathematics III	1		1.25	2.24		1.25	1	2	1				1	2	1.5
205	Object Oriented Programming using Java	2.4	2.4	2								2			2.4	
206	Organizational Behavior	2.4	2.4	2												
207	Biochemistry Lab	2.4	2	2.4								1	1			
208	Microbiology Lab	2.4	2.25	2						1	1.25		1	1	2	1.5
209	Obejct Oriented Programming using Java Lab			1	1.25		2			2.4			2.4			2.4
210	Summer Internship I		1					1.25		1.25					2.4	
211	Essence of Indian Traditional Knowledge		1.5		1			1.25			2		2.4			
212	Molecular Biology	2.4	2.4	2	1								1			
213	Biostatistics	2.4	2.4		2.4	1.5	1.5	1	2	2	1	1	1.5			
214	Bio-analytical Techniques	2.4	1.5	2.5	2	1.5	1		1	1.25	1		1	1	2	1.5
215	Upstream Process Engineering	2.4		1	2		1	1.5	2	2.4	1	1.25	1.5			2.4

216	Fluid Mechanics and Hydraulic Machine	1		2.4	1		1	1.5	1		1.25				2.4	
217	Engineering Economics and Costing		1.25	1	2.4	2.4		2	2	1	1.25		2			
218	Molecular Biology Lab		1.25	2		2			1.25	1	2	2	1	1	2	1.5
219	Biostatistics Lab	2.4	2.4	1.2	2.4		1	2		1.25	1	1	2			
220	Bio Analytical Lab	1.25	1.25		1.5	2			2.4	1	2	1		2.4		2.4
221	Upstream Process Engineering Lab	2.4	2.4	1	2		2	2	1	1.25	2.4				2.4	
221	Minor Project I	1		2		1				1		1.25		1	2	1.5
222	Environmental Science	1			1.25				1.25		2.4		1.25			2.4
301	Genetic Engineering and r-DNA Technology	1		1			1	2	2	2			1	2.4		
302	Immunology and Immuno-technology	1.25	2.4	1			2.4		1	1		1.25	1	1	2	1.5
303	Biochemical Reaction Engineering	1.25	1.25	2.4		1			2			2.4			2.4	
304	Bioreactor Design and Analysis	1.25	1	2.4					1		2		2.4	1	2	1.5
305	Industrial Microbiology and Enzyme Technology	1.25	1.25		2.4			1.25		1.25		2.4		1	2	1.5
306	Process Instrumentation	1.25		1			1.25	1	2.4		1	2	1	2.4		2.4
307	Human Values and Professional Ethics	1		1			1	2	2.4		1		1			
308	Genetic Engineering and r-DNA Technology Lab	1.25	1.25	2			2.4	2.4	2.4		1		1	1	2	1.5
309	Immunology and Immuno-technology Lab	1		1.25		1.25	1.25			2		2	1		2.4	

310	Bioreactor Design and Analysis Lab	1	1.25			2		2	1		2		1			
311	Minor Project II	1.25	2.4	1			1	1.25			2.4		2	1	2	1.5
312	Summer Internship II	1			1		1.25	1		1.25	2.4		4			
313	Plant Biotechnology	1.25		1	1.25		1.25			1.25		1.25	2	1	2	1.5
314	Bioinformatics	1		1.25	1.25		2		2		2		1			
315	Downstream Process Engineering	1.25		2		2.4		2.4		1		1	1.25		2.4	
316	Environmental Biotechnology	1	2.4	1.25	1.25	2.4		1.25	2	1		1	1	1	2	1.5
317	Nano biotechnology	1	1.25	2.4		1			1	2			2		2.4	
318	Optimization in Engineering	1				2					1		1			
319	Dietetics and Nutrition	1.25			1.25	1.25		2.4		1		1				2.4
320	Plant Biotechnology Lab	2.4			2.4			2.4	1	1		2	1	1	2	1.5
321	Bioinformatics Lab	1.25			1			1			2.4	1			2.4	
322	Minor Project III	1.25		1		2.4		1		1.25	1	1	1			
401	Food Biotechnology	2	2	2	2	2.4	1		1	2	1	1	1			
402	Medical and Pharmaceutical Biotechnology	2.4	2.4	1		1		2		2		2	1	1	2	1.5
403	Animal Biotechnology		1.5		1		1.25		1.25		1.25	1				
404	Entrepreneurship Development	1.25	1.25	2.4	1	1	1				1	1				
405	Summer Internship III	1		1				1.25		1	1	1.5		1	2	1.5
406	Major Project I	1.25		1.25		2.4		2.4			1.5		1			
407	Protein Engineering	1.25		1.25		2.4	2	2	2			1	1.5	1	2	1.5
408	IPR, Bioethics and Biosafety	1.25		2	2.4	1			1	2		2	1			

409	Biomedical Instrumentation	1.25	2.4		1.25	2.4			2	2	2	2.4	1.5	1	2	1.5
410	Major Project II	1.25	2.4		1.25	2.4			2.4		2	1.5	1			

Table No.1.5.2: Program articulation matrix for Regulation-23 (R-23)

Course Code	Course Name	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2	PSO3
101	Engineering Mathematics-I	1	1.25	2		2	2		2.4	1	1	2.4			
102	Engineering Chemistry	1		1.25			1.25	1			1	1		2	1.5
1103	Elements of Mechanical Engineering	1.25	2		2.5	1	1.25		1	1.25	1	2			
104	Programming for Problem Solving	1.25	2.4	2.4	2	2	2		1	1	1.25	1			
105	Dietetics and Nutrition	2.4	2.4		2		2	1	1.25	1.25	1	1		2	1.5
106	Communicative English and Soft Skills	1.25	1.25	1		1.5	1	1.25		1.25	1.25	2			2.4
107	Engineering Workshop	2		1		1	1.25	2		1.25	1			2	1.5
108	Induction Program	2		1.5		1	1.25	1.5							
109	Engineering Chemistry Lab	1		2.4		2.4		1.25	2.24		1.25	1			
110	Elements of Mechanical Engineering Lab	1			1.5			1.5		1.25	1	1.5			
111	Programming for Problem Solving Lab	1.25	1		1.25		1.25		1.25		1.25	1			
112	Communicative English and Soft Skills Lab	1.25	2.4	1.25	1		1	2.5		1	1.25	1			
113	Engineering Workshop Lab	1.25	1		1	1	1	1	1.25	1.2	1.25	1			
114	Mathematics-II	1.25	1	2		2.4	2.4	1	1	1.25	1				

115	Engineering Physics		2.4	2	2	2	2		1.25	1	1	1.25			
116	Engineering Mechanics	1.25	1.5		1	1.25	1		1.25	1		1			
117	Data Structure & Algorithms	2.4	2.4	2		2.4	2	2.4	1		1.5	1.5			
118	English	2.4		1	1	1	2.4		2	2	2.4	1	2	1.5	
119	Engineering Graphics & Design	2.4		2	2	2	2.4	2.4		1	1	1.25			
120	NCC/NSS/Yoga	1		1.5		2.4		2.4	2.4			1			
121	Engineering Physics Lab	1.25		1			1.25	1		1	1.25	1.25			
122	Engineering Mechanics Lab	1.25	1	1			2			2					
123	Data Structure & Algorithms Lab	1.25		1.5		2	2	2	1.25	1					
124	English Lab	1.25		1.5	1		2.4		1.25	1	1	1			
125	Engineering Graphics & Design Lab	1	1.25	1.25	1.25	1		2.4	1		1	1			
201	Biochemistry	2.4	2.4	2		1	1	1.25	2		2	1.25	2	1.5	2.4
202	Microbiology	2.4		24		1	1.25	1.25	2	1.25	1	1		2.4	
203	Fundamentals of Biology and Biotechnology	1.25	1.25		2	1		2	2		1.25	1.25	2	1.5	
204	Object Oriented Programming using JAVA	1.25	1		1	1.25	1		1.25	1	1	1			
205	Fluid Mechanics and Hydraulic Machine	1.25	1.25	1		2		2		2	2.4	1			
206	English Learning - 01	1.25	1.25	2.4		2		2	2			2			
207	Biochemistry Lab	1.25		1		2.4	1.25			2		2		2.4	
208	Microbiology Lab	1.25			2		1.25		1.25	1	1	1		2	1.5
209	Object Oriented Programming using JAVA Lab	1.25			1.25	1.25		1.5		1	1.25	1			
210	English Learning – 01 Lab	2.4		2.4	2	2	2	1		1.25	1	1	2	1.5	

211	Summer Internship-1	2	2	2.4		1.25	1.25		1		1	1.25			
212	Learning Project-1	2.4		2		2		2.4	2	1		1			
213	Molecular Biology	2.4	2		2		2		1.25	1.25	1.25	1.25			
214	Biostatistics	2.4		2	2.4	1		1	1.25	1.25		1			
215	Upstream Process Engineering	2.4	2.4		1			2.4		2	1.5	1			
216	Bio-analytical Techniques	1.25	2		2.4		2.4		2		1				
217	Data Base Management System	1.25	2		2	2		2.4	2.4	1.25		1			
218	English Learning - 02	1.25		2		2	2	2		2	2	2			
219	Molecular Biology Lab	1.25	1		1		1.5	1	1		1.25	1.25			
220	Biostatistics Lab	1.25	1.25		1	1.5		2		2	1.25	2			
221	Upstream Process Engineering Lab	1.25		1.25			1		1	1.25	1	1			
222	English Learning - 02 Lab	1.25		2		2	2	2	2			2.4			
213	Learning Project-2	1.25		1		1		1		1.25	1	1.25			
301	Genetic Engineering	1.25		1.25	1	1		1.25		1		1			
302	Plant Biotechnology	1.25	1.25		2	2	2		2		2	2			
303	Industrial Microbiology and Enzyme Technology	1.25	2.4	2.4			2	2			2	1			
304	Bioreactor Design and Analysis	1.25	2.4	2.4			2		2.4		2.4	1.25			
305	Biochemical Reaction Engineering	1.25		1		1	1.25	2.4	2.4		1	1.25			
306	Organisational Behaviour	1.25		1		2		2		2	1	1			
307	Genetic Engineering Lab	1.25	2.25	1		2.4	1	1	2	1	1.25				
308	Plant Biotechnology Lab	2		2	2	2.4	1	1.5	1.25	1.25	1	1.25			

309	Summer Intership-2	1		1	1.25	1.25	1	1	1	2	1				
310	Minor Project-1	1	1		1		1.5	1	1.25	2					
311	Constitution of India	1	2		1		2.4		1	1	1.25	1.25			
312	Immunology and Immunotechnology	1.25		1		1	2		2.4	1	1	2			
313	Bioinformatics	2.5	2		2.4	1		1	1		1	1			
314	Environmental Biotechnology	1.25	1.25		1.25	1		1.25	1.25		1	1.5			
315	Downstream Process Engineering	1.25	1.25	1	1.24	2		2.4	2	2.4	1	1			
316	Optimization Engineering	1.25	1.25	1.25	1	2	2		2	2.4	1	1.5			
317	Engineering Economics and Costing	1		1			2.4	2.25	1.25	1		1			
318	Immunology and Immunotechnology Lab	1		2			2.4		1	1	1				
319	Bioinformatics Lab	1		1	1			1			1	1			
320	Minor Project-2	2	2		2.4		1.25			1.25	1.25	1			
321	Essence of Indian Knowledge Tradition	1.25	1		1	1.25	1.25		1	1	1	1			
401	Animal Biotechnology	1.25	1		1.25			1.25	1		1				
402	Medical and Pharmaceutical Biotechnology	2		2.4		2	2	2.4	1.5			1			
403	Food Biotechnology	2.4	2.4		2	2.4	2	2.4	2	1	1	1.5			
404	Nanobiotechnology	2.4		2	1	2	2	2	1	2	1.25	1			
405	Process Instrumentation	1		1	1.25	1.25		1	1		1.25	1			
406	Summer Intership-3	1		1		1	1	1.25	1.25		1	1			
407	Major Project-1	2		2			2		1		1.25	1.25			
408	Protein Engineering	2		1.25	1		2	1		2	1.25				

409	IPR, Bioethics and Bio safaty	2.4	2.4		2		1.5	1			1	2			
410	Biomedical Instrumentation	2.4		2		1		1	1.25	1.25					
411	Technical Seminar	1.25			2			1.25	2.4	1	1	1			
412	Major Project-2	1		1	1		1.25	2	1.25	1	1.25	1			

Criterion 2: Outcome-Based Teaching Learning (120)

Best Practices

- Implementation of ERP system.
- Everyday subject wise attendance will be upload.
- Continuously monitoring of student attendance, cycle test marks and main exam results.
- Activities to enhance confidence and public speaking abilities of students.
- Conducting proctor interaction with students every day. Uploading the interaction report and student interaction reports in ERP for solving the problems.
- Documenting all the events and storing all the documents.
- Effective utilization of ERP system to take corrective actions.
- Objective evaluation of performance of Faculty and the Department.

2.1. Describe Processes Followed to Ensure Quality of Teaching & Learning

Ensuring the quality of teaching and learning within the Department of Biotechnology at GIET University requires a comprehensive approach that integrates meticulous planning, innovative pedagogical strategies, hands-on laboratory experiences, and tailored support for diverse learner needs. This holistic methodology aligns with the standards established by the National Board of Accreditation (NBA) and fosters an environment conducive to academic excellence.

2.1.1. Adherence to Academic Calendar

The Department of Biotechnology diligently follows the academic calendar to ensure the timely and systematic delivery of the curriculum. This commitment promotes structured learning and facilitates efficient planning of instructional activities, assessments, and co-curricular engagements. Regular monitoring and reviews are conducted to ensure compliance and to make necessary adjustments, thereby maintaining the integrity of the academic schedule.

i. Academic Calendar Setup

The Department adheres to the academic calendar established by the university, which details semester schedules, including the start and end dates, examination periods, project timelines, and holidays. In accordance with the central academic calendar, the department coordinates its activities—such as instructional planning, laboratory sessions, student's assessments, and student engagement initiatives—within its own academic calendar. According to the present scenario of teaching and learning process, modern techniques are adopted in our institution for the upliftment of the students' performance and for the achievement of good results.

2.1.1 Academic calendar of the University for the even semester

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

(Established Vide Odisha Act 23 of 2018, Included by UGC, New Delhi, and Approved by AICTE, ICAR, INC, DSIR, New Delhi)

ACADEMIC CALENDAR FOR EVEN SEMESTER 2024-25

B. Tech – IV Semester [Second Year]

Sl. No.	Event	Date(s)
1	**Commencement of Classes**	**06.12.2024**
2	Registration @ ₹1500 towards Registration Fee	03.01.2025 to 11.01.2025
3	Project Allocation	18.12.2024
4	Project Review I	07.02.2025 to 08.02.2025
5	**Cycle Test – I** (Two Subjects per Day)	**17.02.2025 to 19.02.2025**
6	Date of Completion of Central Evaluation	22.02.2025
7	Publication/Circulation of Cycle Test - I Marks	24.02.2025
8	Sending of Cycle Test-I Marks to Parents	25.02.2025
9	Project Review II	21.03.2025 to 22.03.2025
10	Form Fill-up @ ₹1000 towards Form Fill-up Fee	07.04.2025 to 09.04.2025
11	**Practical/Sessional Examinations and Project Viva-Voce**	**10.04.2025 to 16.04.2025**
12	**Cycle Test – II** (Two Subjects per Day)	**17.04.2025 to 19.04.2025**
13	Date of Completion of Central Evaluation	23.04.2025
14	Publication/Circulation of Cycle Test - II Marks	24.04.2025
15	Sending of Cycle Test- II Marks to Parents	25.04.2025
16	**Closing Date of Instruction**	**19.04.2025**
17	Final Sending of Internal Marks to CoE	30.04.2025
18	**Semester End Examinations**	**25.04.2025 to 10.05.2025**
19	Publication of Semester End Examinations Results	24.05.2025
20	Commencement of Odd Semester 2025-26	01.07.2025

NOTE:

- At least 1 Class Test is to be conducted at the department level before each Cycle Test.
- At least 2 Assignments are to be submitted by the students.
- Non-registered students will not be permitted to attend the classes and not be allowed to stay in the hostels.

N.B. This is for information of concern HoD/Dean, if working days available are less than 90 days, then extra classes are to be taken by the concerned subject teachers to compensate the days.

Controller of Examinations **Registrar**

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

(Established Vide Odisha Act 23 of 2018, Included by UGC, New Delhi, and Approved by AICTE, ICAR, INC, DSIR, New Delhi)

ACADEMIC CALENDAR FOR EVEN SEMESTER 2024-25

B. Tech – VIII Semester [Fourth Year]

Sl. No.	Event	Date(s)
1	**Commencement of Classes**	**02.12.2024**
2	Registration @ ₹1500 towards Registration Fee	03.01.2025 to 11.01.2025
3	Project Allocation	16.12.2024
4	Project Review I	24.01.2025 to 25.01.2025
5	**Cycle Test – I** (Two Subjects per Day)	**07.02.2025 to 08.02.2025**
6	Date of Completion of Central Evaluation	12.02.2025
7	Publication/Circulation of Cycle Test - I Marks	13.02.2025
8	Sending of Cycle Test-I Marks to Parents	14.02.2025
9	Project Review II	07.03.2025 to 08.03.2025
10	Form Fill-up @ ₹1000 towards Form Fill-up Fee	27.03.2025 to 29.03.2025
11	**Cycle Test – II** (Two Subjects per Day)	**02.04.2025 to 03.04.2025**
12	Date of Completion of Central Evaluation	07.04.2025
13	Publication/Circulation of Cycle Test - II Marks	08.04.2025
14	Sending of Cycle Test- II Marks to Parents	09.04.2025
15	**Project Viva-Voce**	**04.04.2025 to 05.04.2025**
16	**Closing Date of Instruction**	**05.04.2025**
17	Final Sending of Internal Marks to CoE	12.04.2025
18	**Semester End Examinations**	**08.04.2025 to 12.04.2025**
19	Publication of Semester End Examinations Results	26.04.2025

NOTE:

- At least 1 Class Test is to be conducted at the department level before each Cycle Test.
- At least 2 Assignments are to be submitted by the students.
- Non-registered students will not be permitted to attend the classes and not be allowed to stay in the hostels.

N.B. This is for information of concern HoD/Dean, if working days available are less than 90 days, then extra classes are to be taken by the concerned subject teachers to compensate the days.

Controller of Examinations **Registrar**

i. Department Calendar & Course Planning

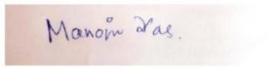
At the departmental level, the academic calendar is further detailed to include:

Aligning the central-level academic calendar with the departmental academic calendar ensures consistency, smooth academic operations, and optimal resource utilization across an institution. This synchronization enhances department coordination, prevents scheduling conflicts, and promotes efficient academic planning.

2.1.1.1 Department Academic Calendar for $4^{th,}$ 6^{th} and 8^{th} semester student

GIET UNIVERSITY, GUNUPUR
SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY
DEPARTMENT ACADEMIC CALENDER FOR EVEN SEMESTER 2024-2025

S.No	EVENTS	4th and 6Th Semester	8th Semester
1	Commencement of classes	06.12.2024	02.12.2024
2	Minor project allocation	25.01.2025	16.12.2024
3	Assignment -1	30.01.2025	6.1.2025
4	Class test-1	03.02.2025	30.1.2025
5	Analysis of class test result	5.02.2025	31.1.2025
6	Project Review-1	15.02.2025	3.2.2025
7	Cycle test -1	17.02.2025 – 19.02.2025	07.02.2025 -08.2.2025
8	Date of completion Evaluation of Cycle Test-1	23.02.2025	10.2.2025
9	Analysis of cycle test-1	23.02.2025	10.2.2025
10	Publication of cycle test marks	24.02.2025	12.2.2025
11	Sending of cycle Test-1 marks	29.02.2025	13.02.2025
12	Submission of course file	30.3.2025	25.3.2025
13	Project Review-II	01.04.2025	30.3.2025
14	Cycle test -2	17.4.2025 – 19.4.2025	02.4.2025 -03.4.2025
15	Date of completion Evaluation of Cycle Test-2	23.04.2025	7.4.2025
16	Analysis of cycle test-2	24.04.2025	7.4.2025
17	Publication of cycle test marks	24.04.2025	8.04.2025
18	Sending of cycle Test-2 marks	25.04.2025	9.4.2025
19	Closing date of Instruction	19.4.2025	5.4.2025
20	Final submission of marks to central exam section	25.4.2025	12.4.2025



HEAD OF THE DEPARTMENT

Initiatives for Effective Alignment

1. **Centralized Planning Committee:** Establishing a committee to regularly review and synchronize academic schedules between the central administration and departments.
2. **Periodic Reviews & Feedback:** Conducting semester-wise evaluations to identify scheduling challenges and make necessary improvements.

3. **Early Publication of Academic Calendar:** Ensuring that the central and departmental calendars are published well to allow faculty and students to plan accordingly.
4. **Stakeholder Consultation:** Engaging faculty, students, and administrative staff in the calendar planning process to accommodate academic and extracurricular requirements.

2.1.2. Instructional Methods and Pedagogical Initiatives

The following methods are some of the appropriate and efficient methodologies according to the characteristic of the learner.

1. **Talk & Chalk**: Usage of black board, chalk and lecture

2**. PPT**: Power Point Presentation for the relevant topic

3. **Visualization**: Showing 3D objects to the students and explaining

4. **Co-operative learning**: A method of instruction characterized by students working together to reach a common goal

5. **Enquiry based instruction**: Prior intimation of the topic in the previous classes to the students for enquiry of the topic and asking the questions in the next class

6**. Differentiation**: Summarizing the types with similarities and differences

7. **Technology**: New & updated technology relevant to the course

8. **Behavior management**: Wide variety of skills and techniques that teachers use to keep students organized, orderly, focused, attentive, on task, and academically productive during a class

9. **Professional development**: improving their professional knowledge, competence, skill, and effectiveness

10. **Seminars**: Seminar should be given by the student

11. **Brain storming**: Giving a topic and allowing the students to think over it for new ideas

12. **Buzz group**: Formation of groups with 3-4 members in each and discussion on the Topic

13**. Animated lecturers**: Showing Animated videos to students

14. **Pictorial sessions**: 2D objects charts

15**. Debate sessions**: Assigning a topic to the students and allow them to debate

16. **Quiz:** Asking Questions on the covered topic by forming the batches.

17. Survey based assessment

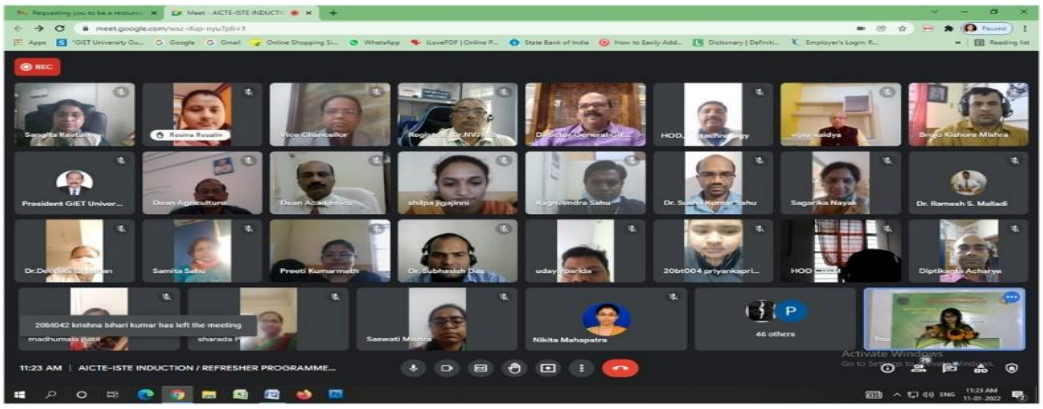
18. **Role play**: Students are explored realistic situations by interacting with other people in a managed way in order to develop experience and trial different strategies in a supported environment.

The department employs a diverse array of instructional methods to cater to various learning styles and to enhance the educational experience

Classroom Teaching Methods

- **Traditional Lectures**: Use of chalk-and-board or multimedia presentations.
- **ICT-Based Learning**: Integration of online platforms such as MOOCs, NPTEL, and SWAYAM for supplementary learning.
- **Case Studies & Industry Applications**: Real-world examples related to emerging trends in the field of Biotechnology, such as Industrial visits, Innovative research, Seminars and conferences in which students will gain knowledge in advances in Biotechnology in industrial application and real world**.**

2.1.2 ICT-BASED Learning:



Laboratory and Practical-Based Learning:

Conduct of Laboratory Experiments

Laboratories are equipped with the necessary infrastructure to facilitate the effective delivery of experiments in the laboratory. For laboratory sessions, students have to bring the laboratory manual, control book, and record book. Students are advised to study the theory behind the experiment and conduct the experiment before the laboratory session. Students conduct experiments and record notes in the notebook. After completing the experiment, students are encouraged to discuss learning from the experience.

Each faculty performs the PO mapping analysis for the experiments offered by the university and select appropriate experiments, for the labs where the university offered a choice. Additional experiments are framed considering the mapping.

- **Hands-on Experiments**: Students perform laboratory experiments using advanced equipment to reinforce their theoretical knowledge with practical applications.

- **Industry-Linked Experiments**: Experiments related to IoT-based monitoring, automation, and real-time data analytics equip students with industry-relevant skills and practical exposure.

Industry Engagement & Experiential Learning:

- **Guest Lectures & Workshops**: Industry experts and academicians deliver sessions on emerging trends, offering students valuable insights into technological advancements.

- **Internships & Live Projects**: Collaboration with industry partners allows students to apply academic knowledge in real-world scenarios through internships and live projects.

Molecular Biology lab

Bioinstrumentation Lab and Bioinformatics Lab

Continuous Assessment in the laboratory:

Continuous evaluation is done by the faculty in every lab session for 10 marks based on rubrics as shown in Table below. The average marks of all session will be considered for awarding final internal assessment.

Rubric of assessment of experiment as blooms taxonomy with a maximum of 10 marks per each experiment.

Understanding: Aim, Material required and concept of behind the experiment 3 marks for each experiment.

Conducting and observation: The student has to perform the experiment and obtain the results and have to analyse the result, which would be given 4 marks

Accuracy of the performance the experiment, following the correct procedure and obtained the result carry 3 marks.

Marks allocates for Students

Parameters	Allocated marks	High	Medium	Low
Experiment	10	Student was able to conduct the given experiment with output.	Student was partially able to conduct the given experiment	Student was not able to conduct given experiment.
		10 marks	8 marks	5 marks
Viva voice	10	Student answered all the viva voce Questions	Student Answered only a few viva voce questions	Student did not answer any viva voce question
		10 marks	5-6 marks	2 marks

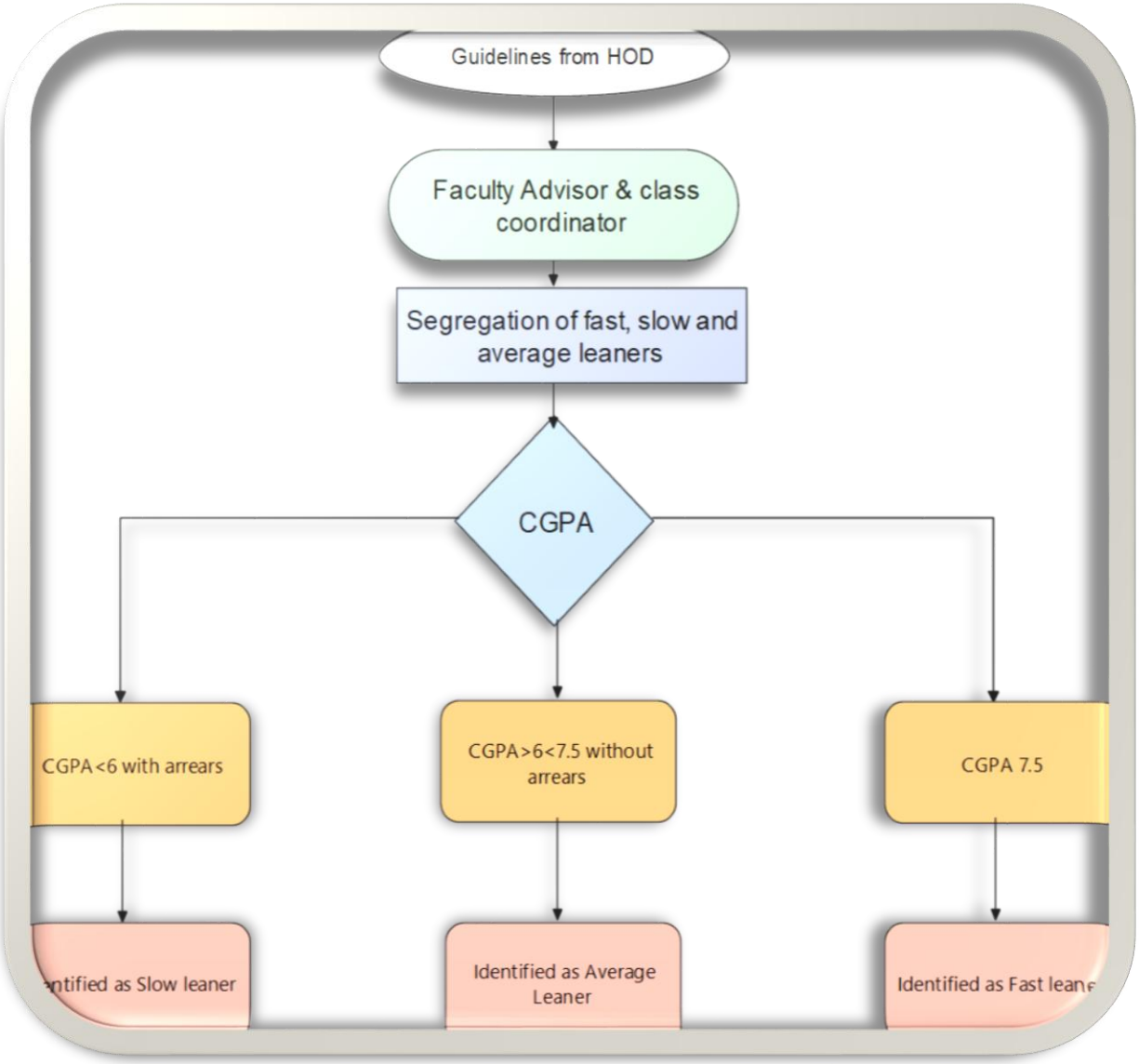
Record writing	10	Completed record was submitted	Record was submitted but if incomplete	Record was not submitted in the lab
		10 marks	**5 marks**	**0 marks**

Industry Engagement & Experiential Learning

- **Guest Lectures & Workshops**: Experts from the industry provide insights into cutting-edge technologies.
- **Internships & Industrial Training**: Students are encouraged to participate in industry internships and live projects for hands-on experience.

2.1.3. Supporting Diverse Learners

Recognizing the varied learning styles of students, the department implements strategies to support both fast and slow learners. The process begins at the department with segregation of students. The process flow is shown in figure below



Methodology to identify weak students:

- Weak students are identified from their participation in classroom discussion, performance in the Class and cycle tests (less than 12 out of 30 marks) and University result analysis.
- Department arranges remedial lectures for weak students in all the subjects.
- Proctor informs the parents regarding improvement in the performance of their ward on regular basis.

- Attempts are made by the teachers to give personal attention to the weak students.
- Specially developed question banks and assignments are given to the students.
- Participative and progressive weak students are given a chance to improve team work to motivate and appreciate their efforts.
- A blended motivation and responsibility from both parents and faculty will create a positive mindset and will help to overcome the inabilities and hurdles faced by the slow learners.
- A special counseling and tutorial classes are conducted by the faculty for those students who have failed in any subject

Image 2.1.3 List of student of slow learner's remedial classes attendance for 4th and 6th Semesters

Program: BTech
Branch : Biotechnology
Semester: 4
Faculty Name:-
Batch-2023-27
Accademic Year:-2024

REMEDIAL CLASS ATTENDANCE SHEET

SL.NO	Rollno	Regd No	Name	Number of Classes
1	23BT007	23UG010007	RAHUL SIVALA	
2	23BT022	23UG010020	SUBHAM KUMAR MAHARANA	
3	23BT033	23UG010030	DINESH TANTY	
4	23BT041	23UG010037	NILUDRA CHAKRABORTY	
5	23BT043	23UG010039	SAYAD ABDUL KHASIM	
6	23BT048	23UG010043	SWAGAT PATRA	
7	23BT057	23UG010052	ASHUTOSH PRUSTY	
8	23BT059	23UG010054	SURYA PRAKASH SAHOO	
9	23BT063	23UG010058	RAJNEEKANT	

Number of Absentees
Number of Present
Date
Signature

Program: BTech
Branch : Biotechnology
Semester: 4
Faculty Name:-
Batch-2023-27
Accademic Year:-2024

REMEDIAL CLASS ATTENDANCE SHEET

SL.NO	Rollno	Regd No	Name	Number of Classes
1	23BT007	23UG010007	RAHUL SIVALA	
2	23BT022	23UG010020	SUBHAM KUMAR MAHARANA	
3	23BT033	23UG010030	DINESH TANTY	
4	23BT041	23UG010037	NILUDRA CHAKRABORTY	
5	23BT043	23UG010039	SAYAD ABDUL KHASIM	
6	23BT048	23UG010043	SWAGAT PATRA	
7	23BT057	23UG010052	ASHUTOSH PRUSTY	
8	23BT059	23UG010054	SURYA PRAKASH SAHOO	
9	23BT063	23UG010058	RAJNEEKANT	

Number of Absentees
Number of Present
Date
Signature

Program: BTech
Branch : Biotechnology
Semester: 6

Faculty Name:-
Batch-2022-26
Accademic Year:-2024

REMEDIAL CLASS ATTENDANCE SHEET

SL.NO	Rollno	Regd No	Name	Number of Classes									
1	22BT002	22UG010013	ASHUTOSH DORA										
2	22BT010	22UG010021	SRUSTI RANJAN DASH										
3	22BT017	22UG010028	MUSKAN PANDA										
4	22BT018	22UG010029	DINESH HARICHANDAN SINGH SAMAL										
5	22BT019	22UG010030	SUBHASMITA SWAIN										
6	22BT021	22UG010032	AMREET KUMAR NAYAK										
7	22BT022	22UG010033	KISHAN BHARADWAJ PANDA										
8	22BT023	22UG010034	BANSITA LENKA										
9	22BT025	22UG010036	SANDHYA RANI SETHI										
10	22BT029	22UG010040	SRIYA LAXMI DORA										
11	22BT031	22UG010042	MAHESH SENAPATI										
12	22BT039	22UG010050	JEMADEI NALLA										
13	22BT049	22UG010060	MD. INTAKHAB ALAM										
14	22BT054	22UG010065	BOBBY SABAR										
15	22BT058	22UG010069	BANSIDHAR HUIKA										
16	22BT069	22UG010080	GYANA RANJAN MALLICK										
17	22BT072	22UG010083	CHHOTU KUMAR										
18	22BT077	22UG010005	TEJASWI MEHER										
19	22BT078	22UG01LE01	P.SAISUDHA PATRO										
Number of Absentees													
Number of Present													
Date													
Signature													

- **Support to Slow Learners:** Tailored support mechanisms, such as remedial classes, mentoring, and personalized feedback, are in place to help struggling students overcome academic challenges. This individualized attention ensures that all students have the opportunity to succeed.
    - Remedial Classes & Extra Tutorials: Additional teaching sessions to reinforce concepts.
    - Mentorship Programs: Encouraging senior students to mentor slow learners.
    - Interactive Learning with Practical Applications: Using industry case studies and application-oriented exercises.

Methodology to identify bright students

- The bright students are identified from their participation in classroom discussion, performance in the cycle and class test marks and participation in classroom seminars, questioning ability and University result analysis.
- The bright students are encouraged to participate in symposia, workshops and seminars to gain knowledge on the latest developments.
- The students are encouraged to take up industry based projects in the advanced topics under the guidance of the faculty members.
- They are provided with the guidance about patents, project management and prototype building.
- Bright students are encouraged to lead the student's association team which organizes various activities like paper presentation, poster presentation, lecture series etc.
- Bright students having high academic track records are encouraged by faculties to achieve university ranks and are also encouraged to take up competitive examinations like GATE, GRE etc.

Encouraging Advanced Learners: High-achieving students are provided with opportunities to engage in advanced projects, research activities, and leadership roles in academic forums, stimulating their intellectual growth.

- **Advanced Research Topics & Mini Projects**: Encouraging students to participation in real-time projects, Start-ups, Start up Odisha etc
- Participation in Seminars/conferences: Encourage students to participate in national and international seminars/conferences and present their research works/papers.
- Internship & Research Paper Guidance: Supporting students to publish research papers and explore industry internships.

2.1.4 Quality of classroom Teaching

Assessment of Learning Outcomes

Continuous Evaluation: Student comprehension is assessed throughout the course through regular quizzes, assignments, and cycle test 1& 2.

Implementation: The assessment methods align with learning outcomes, with formative and summative assessments employed to gauge progress.

Impact Analysis: Continuous assessments provide feedback to students and instructors, allowing for adjustments in teaching strategies and personalized support.

Feedback Mechanism

Process: Students provide feedback on teaching methods, course content, and laboratory experiences to ensure the learning process is student-centred.

Implementation: Surveys and feedback forms are distributed regularly, and actionable suggestions are implemented to improve teaching quality.

Impact Analysis: The feedback mechanism fosters a responsive teaching environment, improving student satisfaction and learning outcomes.

2.1.4 Sample Feedback forms of the faculty the academic year 2024-2025

6TH SEM B.TECH Biotechnology FEEDBACK(2022-2026) NBT

GIET UNIVERSITY GUNUPUR

HUMAN RESOURCES DEPARTMENT

6TH SEM B.TECH Biotechnology FEEDBACK(2022-2026)

NBT-Dr. Diptikant Acharya

DATE OF FEEDBACK: 11-Feb-2026							
		Excellent	Very Good	Good	Fair	Poor	
Teacher is punctual and regular		50	1	0	0	0	254
Level of preparation in the subject		48	3	0	0	0	252
Teacher speaks clearly and audibly		49	2	0	0	0	253
Teacher uses Black/White Board ,Power point Presentation and other online tools properly		49	2	0	0	0	253
Teacher provides examples of concept /Principle	A	49	2	0	0	0	253
Teacher answers the questions and clarifies the doubts on the subject		49	2	0	0	0	253
Teacher makes the class interesting , interactive and simulates interest on the subject		48	3	0	0	0	252
Teacher maintains discipline in the class		48	3	0	0	0	252
Teacher offers assistance and counselling as and when needed		49	2	0	0	0	253
Teacher is impartial to all the students		50	1	0	0	0	254
		489	21	0	0	0	2528
NO. OF STUDENT	51						
	TOTAL	98.18					

COMMENTS

Excellent
Excellent
So nice
Excellent
BEST TEACHER OF GIET UNIVERSITY .BEST TEACHER OF NANO BIOTECHNOLOGY. THE BEST GUIDE FOR EVERY STUDENT.THE BEST SPEAKER AND MOTIVATOR OF GIET UNIVERSITY
Onr of the best teacher of the year
Sir is very kind and good hearted person he is helping everyone in every difficulty he is very supporting
Excellent

4TH SEM B.TECH Biotechnology FEEDBACK(2023-27) MB

GIET UNIVERSITY GUNUPUR
HUMAN RESOURCES DEPARTMENT
4TH SEM B.TECH Biotechnology FEEDBACK(2023-27)

MB-Dr.Diptikant Acharya

DATE OF FEEDBACK: 11-Feb-2025							
		Excellent	Very Good	Good	Fair	Poor	
Teacher is punctual and regular		47	2	0	0	0	243
Level of preparation in the subject		46	3	0	0	0	242
Teacher speaks clearly and audibly		47	2	0	0	0	243
Teacher uses Black/White Board ,Power point Presentation and other online tools properly		46	2	0	1	0	240
Teacher provides examples of concept /Principle	A	48	1	0	0	0	244
Teacher answers the questions and clarifies the doubts on the subject		48	1	0	0	0	244
Teacher makes the class interesting , interactive and simulates interest on the subject		48	1	0	0	0	244
Teacher maintains discipline in the class		44	5	0	0	0	240
Teacher offers assistance and counselling as and when needed		45	4	0	0	0	241
Teacher is impartial to all the students		46	2	0	0	1	238
		465	23	0	1	1	2420
NO. OF STUDENT	49						
	TOTAL	98.78					

COMMENTS
Excellent
Nice
Best sir
No suggestions needed whatsoever
Sir teaches and guide us very well
Superb and very helpful teacher
Nothing
Super duper
No suggestion
Best teacher
Dijs
Sir is beyond perfection.
He is absolutely nice teacher
Thank you so much sir for all your efforts and support
He is the excellent teacher with the best guidance experience
He individual take care of each and every student.Such a great professor.
He is not only a good teacher but also a good person.He motivates us a lot . Thank you
Outstanding
Extra class for providing knowledge.. information.. ideas.. besides the syllabus"

2.1.5. Conduct of Experiments:

Quality of Laboratory Experience

Conducting Experiments: Laboratory sessions are designed to supplement theoretical learning with practical experience.

Implementation: The curriculum includes hands-on experiments that align with lecture topics. Standard operating procedures are provided, and students are guided to perform experiments independently under supervision.

Impact Analysis: Students gain practical skills, learn the importance of accuracy, and develop problem-solving abilities through experimental tasks.

2.1.5 Quality of Laboratory Experiment hands- on Experiments


BIOREACTOR SYSTEM
GPS Map Camera
Rayagada,OR,भारत
Gunupur, Rayagada, 765022, OR, भारत
Lat 19.049406, Long 83.832221
04/26/2024 05:00 PM GMT+05:30
Note : Captured by GPS Map Camera


GPS Map Camera
Rayagada,OR,भारत
Gunupur, Rayagada, 765022, OR, भारत
Lat 19.049486, Long 83.832374
04/26/2024 05:01 PM GMT+05:30
Note : Captured by GPS Map Camera

Implementation: Students are required to maintain detailed lab reports, analyze their data, and present their conclusions.

Impact Analysis: This encourages precision, critical thinking, and technical writing skills, preparing students for research and industry roles.

List of Laboratories in the Department of Biotechnology

1. Molecular Biology Lab
2. Microbiology Lab
3. Instrumentation lab
4. Plant Tissue culture lab
5. Bioprocessing lab
6. The Department also established with BIRAC- EYUVA centre to encourage young entrepreneurs and innovative fellows.

2.1.6. IMPLEMENTATION DETAILS & IMPACT ANALYSIS

A well-coordinated approach ensures the effective execution of teaching and learning strategies, leading to continuous academic enhancement.

Faculty Development:

- **Regular Training & Workshops**: Faculty members participate in FDPs and specialized workshops to stay updated with modern teaching methodologies and industry advancements.

Curriculum Design:

- **Periodic Review & Industry Integration**: The curriculum undergoes regular updates to incorporate emerging technologies and industry best practices, ensuring that students receive relevant and up-to-date education.

2.1.6 Certificates of Faculty participated in Faculty Development Courses

NPTEL-AICTE
Faculty Development Programme
(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to
Dr MANOJA DAS
for successfully completing the course
Forests and their Management
with a consolidated score of 78 %

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

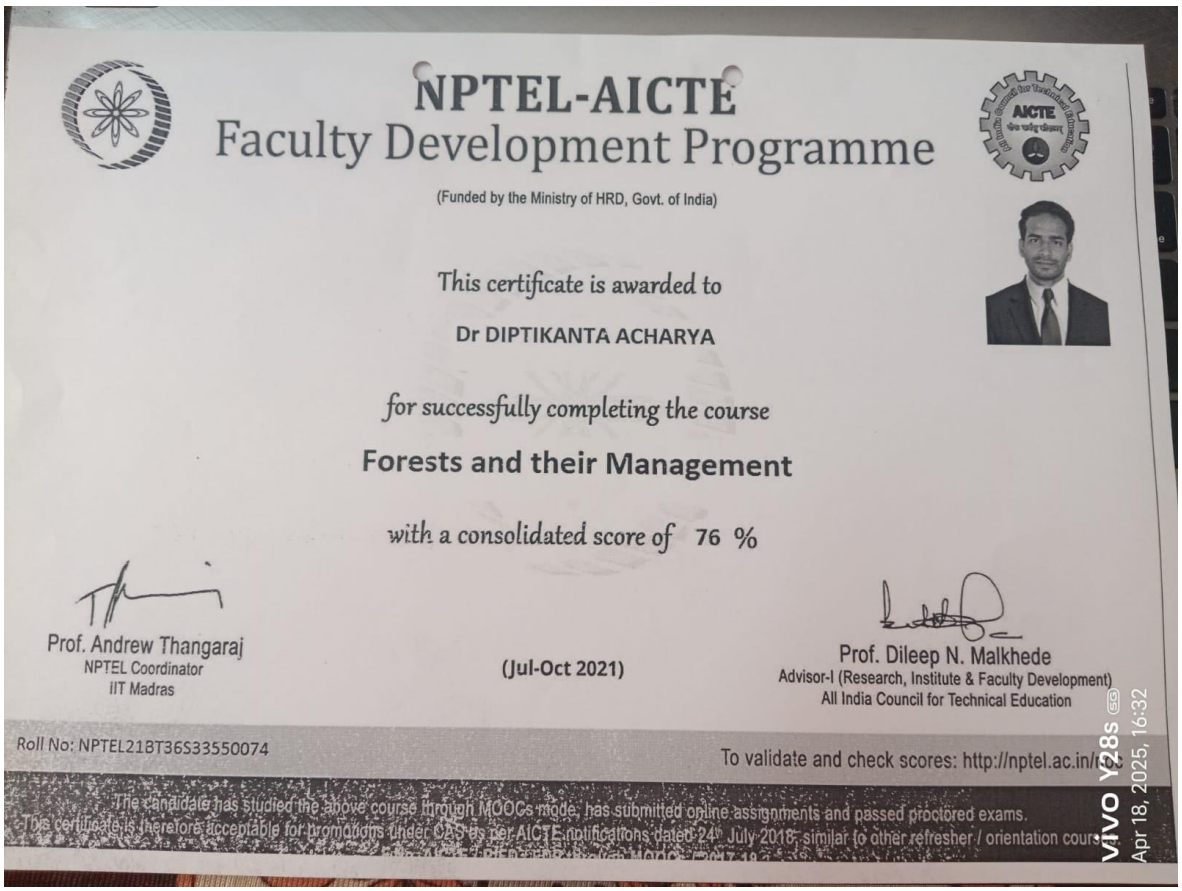
(Jul-Oct 2021)

Prof. Dileep N. Malkhede
Advisor-I (Research, Institute & Faculty Development)
All India Council for Technical Education

Roll No: NPTEL21BT36S33550084

To validate and check scores: http://nptel.ac.in/noc

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams.
This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 24th July 2018, similar to other refresher / orientation courses.



NPTEL-AICTE
Faculty Development Programme
(Funded by the Ministry of HRD, Govt. of India)

This certificate is awarded to
Dr DIPTIKANTA ACHARYA
for successfully completing the course
Forests and their Management
with a consolidated score of 76 %

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

(Jul-Oct 2021)

Prof. Dileep N. Malkhede
Advisor-I (Research, Institute & Faculty Development)
All India Council for Technical Education

Roll No: NPTEL21BT36S33550074

To validate and check scores: http://nptel.ac.in/n...

The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams.
This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 24th July 2018, similar to other refresher / orientation cours...

Continuous Feedback & Improvement:

- **Data-Driven Insights**: Student performance is periodically reviewed to refine teaching methodologies.

- **Innovative Curriculum Enhancements**: Real-world applications and cutting-edge research techniques are incorporated to strengthen students' academic and professional competencies.

2.2. Quality of Student Capstone Project

The quality of student capstone projects within the Department of Biotechnology at GIET University is paramount to produce competent engineers equipped to tackle contemporary challenges. The department has established a comprehensive framework that encompasses project identification, allocation, continuous monitoring, evaluation, and the demonstration of working prototypes. This framework emphasizes critical factors such as environmental considerations, sustainability, safety, ethics, cost-effectiveness, and adherence to industry standards. Additionally, the projects are designed to address specific Program Outcomes (POs) and Program Specific Outcomes (PSOs), ensuring alignment with the educational objectives of the department.

2.2.1. Identification of capstone/major project and allocation of guides

Identification of Capstone/Major Project and Allocation of Guides follows the below approach:

2.2.1.1 Identification of Capstone/Major Projects

The capstone/major project selection is a structured process aimed at ensuring students engage in innovative, industry-relevant, and research-oriented projects. The selection process includes the following steps:

(a) Problem Identification & Domain Selection

- Students explore project ideas based on:
  - **Current Industry Trends**: Biodegradable products, Start-ups research, Agriculture, Smart materials, Medical devices.
  - Research Gaps Identified from Literature, Industry case studies, Smart India, Make in India. Statup odisha

- **Societal & Sustainable Development Goals (SDGs)** (Smart Agriculture Appliances and accessories, Application of AI to Healthcare sectors).
- Faculty and Industry Expert Recommendations.

(b) Categorization of Projects

Projects are categorized into:

1. **Research-Based Projects** (Molecular biology, Microbiology, Plant and Agriculture, Animal Biotechnology, Environment Biotechnology, Bioinformatics etc)
2. **Application area**: Health care, Agriculture, Bioprocess optimization, Smart and advanced materials, Drug delivery and design etc
3. **Innovation and Entrepreneurship Projects**: Entrepreneurial/ Product Design, Development of Biotechnology based product ideas.

(C) Submission of project Proposal:

Students will be submitting a detailed project proposal, including
Problem Statement
Research gap
Objectives
Expected Outcomes
Novelty
Methodology

Project Review Committee (PRC), comprising faculty members and subject experts, evaluates the proposals and gives their comments.

(D) Mentors Allocation

Once projects are shortlisted, faculty members are allocated as Project Mentor based on:

- Faculty Expertise & Specialization (aligned with the project domain).
- Faculty Workload & Availability (ensuring effective mentoring).

(E) Project Execution & Monitoring

- Phase 1: Literature Review & Methodology Finalization
- Phase 2: Design, & Prototyping

- Phase 3: Implementation of work at lab
- Phase 4: Evaluation & Presentation

(F) Outcome Evaluation

- Assessment Criteria:
  - Innovation & Novelty
  - Industry Relevance & Feasibility
  - Sustainable & Societal Impact
  - Presentation
- Final Presentation & Demonstration:
  - Final presentation will be conducted before the Experts, HoD, and Faculty members.
  - Industry and research experts provide feedback for improvement.
  - Publication of the work in conference and journal publication

2.2.2. Types and relevance of the capstone/major project and their contribution towards the attainment of POs and PSOs

Capstone or major projects play a crucial role in the academic curriculum of engineering and technology programs. These projects serve as an integrative experience, allowing students to apply theoretical knowledge to practical, real-world problems. They significantly contribute to the attainment of Program Outcomes (POs) and Program-Specific Outcomes (PSOs) by enhancing technical competence, problem-solving skills, ethical considerations, and industry relevance.

Major projects can be classified into various categories based on their objectives, scope, and nature of the work involved. The primary classifications include is listed in the Table.

2.2.2 Classification of projects and their relevance PO & PSO

Classification of Projects and Their Contribution Project Type	**Example**	**Relevance (PO & PSO Mapping)**
Application-Based Projects	Bioremediation, Bio fertilizers etc.	Enhances problem-solving (PO1, PO2, PO4), tool usage (PO5), and technology application (PSOs)

Product Based Projects	Eco-friendly bioplastics, Probiotics etc.	Strengthens innovation (PO3), teamwork (PO9), industrial product development (PSOs)
Research-Oriented Projects	Molecular biology, Chromatin opening etc	Encourages research (PO4), data analysis (PO2), and advanced computing skills (PSOs)
Review-Based Projects	Emerging trends in vaccines etc	Enhances critical thinking (PO12), life-long learning (PO10), theoretical understanding (PSOs)
Experimental/Validation-Based Projects	Isolation, Characterization, etc	Improves hands-on skills (PO5), experimental investigations (PO4), and energy management (PSOs)

2.2.2.1 List of Research oriented projects applied by student for Funding

Agency	Title of the project	Name of the Mentor	List of students in group	Outcome of the project	PO mapping	PSO mapping
DBT BIRAC E-YUVA	3D Printed Bio based beehive for automated honey collection	Dr. Swastik Beher	Trushna Rani Nahak Priyambada Behera Ankit Meher Rudra Narayan Behera Ipsita Ratha	Ongoing	PO1, PO2, PO4, PO5, PO9, PO10	PSO1, PSO2
MSME	AI integration aquaculture system of microalgae cultivation	Dr Rabi Prasad	Puja rani barik(22bt007) Amreet kumar (22bt021)	Applied	PO1, PO3, PO4, PO5, PO7, PO9, PO10	PSO1, PSO2
BIRAC	Feminine hygiene wash	Mrs Sagarika	Puja rani barik Suhani Pattnaik Shivratri jaswant Shrestha Simran	Applied but not selected	PO1, PO2, PO4, PO5, PO9, PO10	PSO1, PSO2

Start-up Odisha	Degradation of PET and generation of electricity using bacteria-Ideonella Sakaensis	Dr Diptikanta Acharya	Ashok kumar Praveen kumar Jaswanth sivaratri Chinmaya Das Jemadei	Applied but not selected	PO1, PO2, PO3, PO4, PO7, PO9, PO10,	PSO1, PSO2
BIRAC	Early cardiovascular disease detection using a cardio chip and nanotechnology	Dr Rabi Prasad	Jaswanth sivaratri Chinmaya Das Harshita Geethanjali	Applied but not selected	PO1, PO2, PO3, PO4, PO7, PO9, PO10, PSO1, PSO2	PSO1, PSO2

2.2.2.1 Project sanction letter of the project applied by students

बाइरैक
इग्नाइट इनोवेट इन्क्यूबेट
birac
ignite innovate incubate

E - YUVA CENTER

(Established by Biotechnology Industry Research Assistance Council, Govt. of India)
Department of Biotechnology
GIET University, Gunupur, Odisha, India

Reference No. 83/BIRAC/EYC/GIETU Date. 01../..06./2024

To,

Application Reference No.	Team Members	Team Institute	Proposal Title	Team Mentor
BT/EF0604/2.0/24	Mr. Rudra Narayan Behera	GIET University, Gunupur, Odisha	3D Printed Biobased Beehive for Automated Honey Collection	Dr. Somanath Sahoo
	Mr. Ankit Meher			
	Ms.Trushna Rani Nahak			
	Ms. Ipsita Ratha			
	Ms. Priyambada Pr. Behera			

Sub: BIRAC E-YUVA Fellowship regarding
(Ref: Email from BIRAC dated 01.06.2024)

Dear E-YUAV Applicants,

We are pleased to inform you that your proposal (*Ref. No. BT/EF0604/2.0/24*) for the **E-YUVA** (*Empowering Youth for Undertaking Value Added Innovative Translational Research*) fellowship under the BIRAC E-YUVA scheme has been selected in the 2nd National Call for proposals for fellows. Your team has been selected for the E-YUVA Fellowship at the DBT-BIRAC E-YUVA Centre, GIET University, Gunupur, Odisha, for the session 2024-2025.

The fellowship will commence upon the signing of the attached Sub-Grant Agreement (SGA). Please review the terms and conditions of the fellowship carefully.

Kindly confirm your acceptance and joining at the centre immediately upon receiving this letter. Additionally, please bring all relevant original documents for verification during the signing of the SGA.

We look forward to your contributions to our innovation ecosystem and to achieving the aims and objectives of the fellowship.

Best regards,

01/06/2024
Dr. Sudipta Maity
Coordinator
BIRAC E-YUVA CENTRE
GIET Unit. rsity,
GUNUPUR-765022, Odisha

DBT-BIRAC E-YUVA CENTRE ★ GIET UNIVERSITY ★ GUNUPUR, ODISHA
E-YUVA CENTER GIET UNIVERSITY

01/06/2024
Dr. Manoja Das
Chief Coordinator
BIRAC E-YUVA CENTRE
GIET University,
GUNUPUR-765022, Odisha

GANDHI INSTITUTE OF ENGINEERING & TECHNOLOGY UNIVERSITY
Gunupur-765022, District: Rayagada, Odisha, India, www.giet.edu
Approved by Govt. of Odisha

Capstone of Project Development

To ensure holistic learning and meaningful project execution, several factors must be considered:

Environmental and Sustainability Considerations

Projects should align with sustainable development goals and environmental impact assessments.

- Example: Biodegradable plastics, Bio fertilizer, Waste water management.

Safety Considerations

B. Tech Biotech Engineering projects should prioritize user safety, risk management, and Biosafety.

- Example: Antimicrobial resistant Pathogens.

Ethical Aspects

Projects should address ethical concerns such as data privacy, fair use of resources, and professional integrity.

- Example: Dealing with animals.

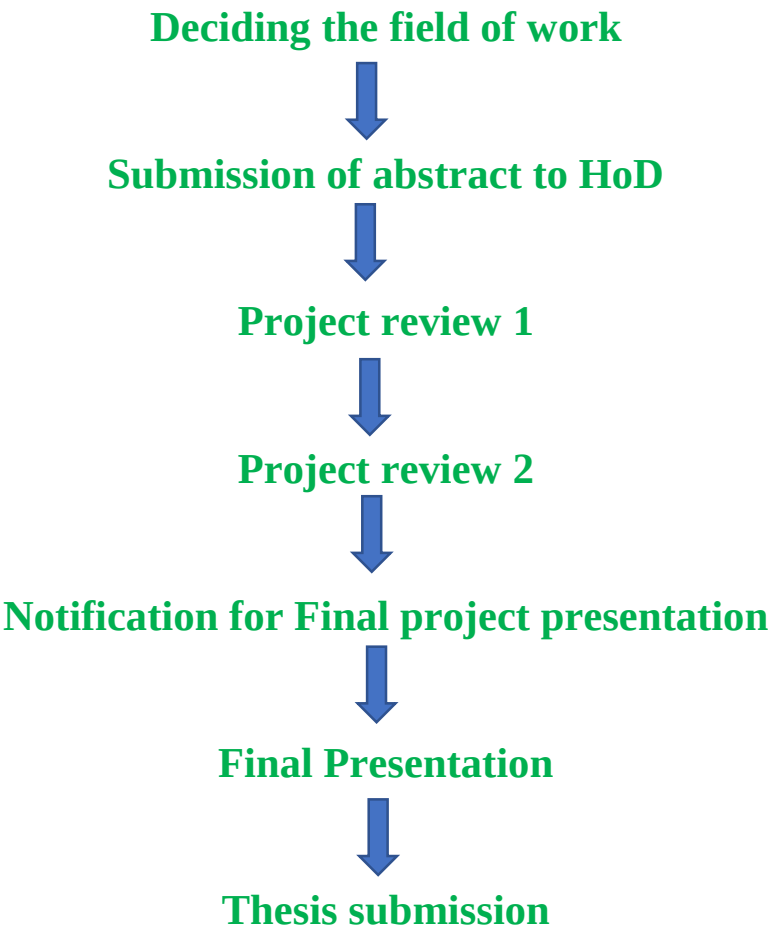
2.2.3. Continuous monitoring process

Continuous monitoring of UG major projects is essential to ensure structured progress, research quality, and attainment of Course Outcomes (COs) and Program Outcomes (POs). The monitoring is carried out exclusively by the respective project guides and the Head of the Department.

2.2.3.1. Continuous Monitoring Process of B. Tech regular semester Projects

Monitoring projects follows a structured approach involving **regular meetings, milestone tracking, and performance evaluation**. The process includes the following key aspects:

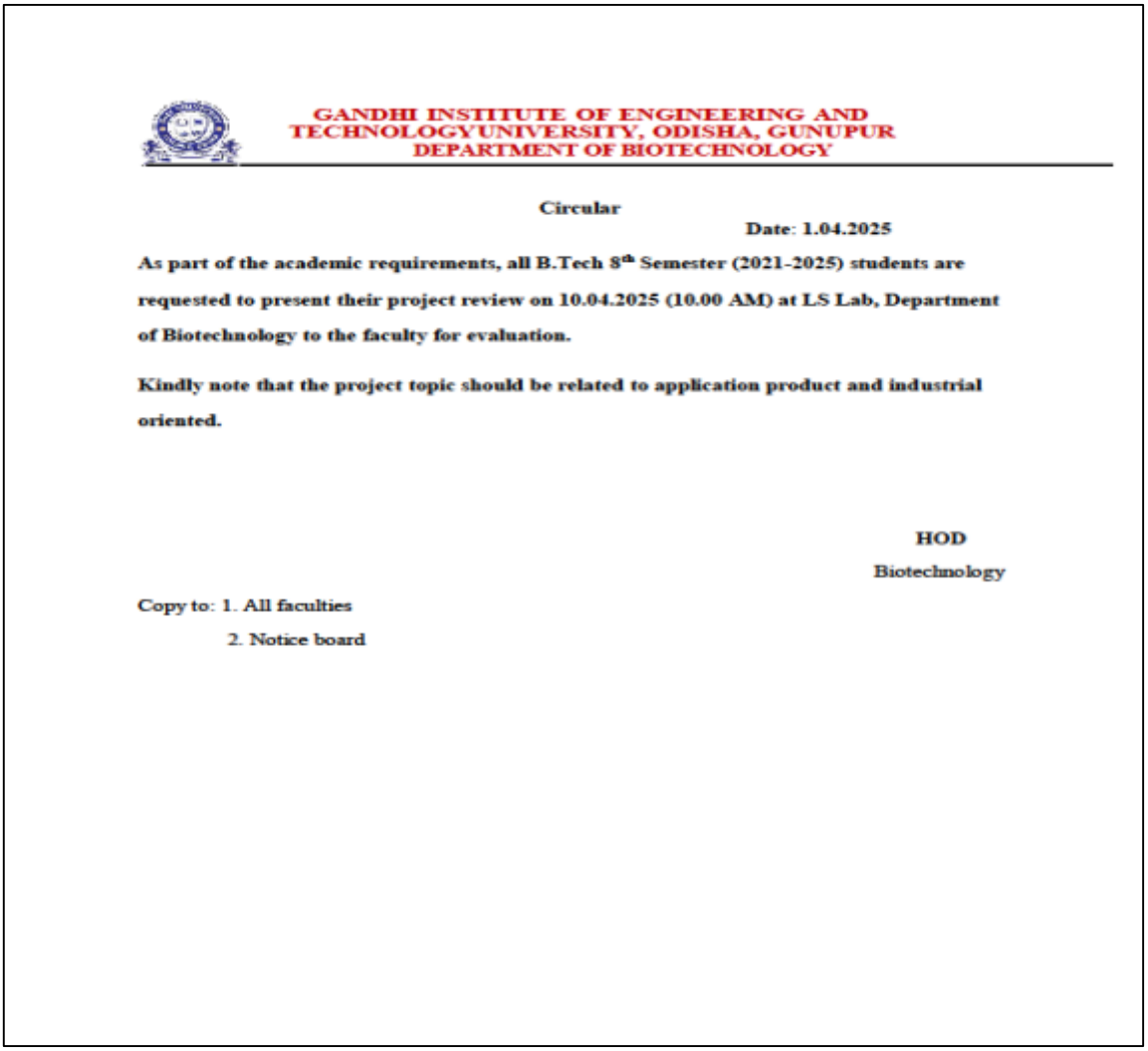
Project Mentor allocation



- **Project Selection & Approval:**
  - Students propose project topics, which are reviewed and approved by the HoD and assigned project guides based on relevance, feasibility, and innovation.
  - Approved projects align with CO-PO mapping to ensure academic and industry relevance.
- **Periodic Review by Project Guides:**
  - Project guides conduct regular monitoring sessions with assigned students to track progress, address technical challenges, and guide research methodologies.
  - Ensures that students follow the proposed timeline and meet expected deliverables.
- **Documentation and Reporting:**
  - Students submit progress reports, project documentation, and technical papers as per defined deadlines.
  - Guides review reports and provides constructive feedback for improvement.

- **Final Review and Submission:**
  - The HoD and project guides conduct a final evaluation based on project quality, innovation, implementation, and report submission.
  - The evaluation considers technical accuracy, CO-PO attainment, and societal impact.

2.2.3.1 Sample copy of notice circulated for students to present final B. Tech project for Award of Degree



GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
DEPARTMENT OF BIOTECHNOLOGY

Circular

Date: 1.04.2025

As part of the academic requirements, all B.Tech 8th Semester (2021-2025) students are requested to present their project review on 10.04.2025 (10.00 AM) at LS Lab, Department of Biotechnology to the faculty for evaluation.

Kindly note that the project topic should be related to application product and industrial oriented.

HOD
Biotechnology

Copy to: 1. All faculties
2. Notice board

2.2.3.2 List of final projects submitted by the Regular B. Tech students for the award of B. Tech Degree in Biotechnology with POs/PSOs

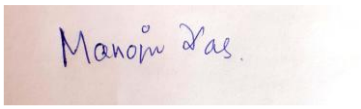
GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

DEPARTMENT OF BIOTECHNOLOGY

LIST OF STUDENTS PROJECT BATCH: 2019-2023

SL NO	Roll No.	REGD NO	NAME OF THE STUDENT	TOPIC NAME	NAME OF THE SUPERVISOR	POs/PSOs
1	19BT002	1901030002	SOUMYA RANJAN SAMANTARAY	Biosynthesis of Manganese nanoparticle as nanofertilizer using Adhatoda vassica	Dr. Manoja Das	PO1, PO3, PO4, PO5, PO7, PO9, PO10, PSO1, PSO2
2	19BT005	1901030005	PRATYUSH MOHAPATRA			
3	19BT006	1901030006	MANISHA N PRIYADARSHINEE			
4	19BT013	1901030013	AMISHA MOHAPATRA			
5	19BT014	1901030014	HANISA SUBUDHI			
6	19BT001	1901030001	ARPITA ROUT	Extraction of Secondary Metabolites from Mimosa pudica L. and Study of its Antimicrobial Activity	Dr. Diptikanta Acharya	PO1, PO2, PO4, PO5, PO9, PO10, PSO1, PSO2
7	19BT009	1901030009	RASHMI PRIYADARSHI SHARMA			
8	19BT010	1901030010	ABHISHEK PATTANAYAK			
9	19BT011	1901030011	SANAT MAHATO			
10	19BT023	1901030023	PUJA KUMARI			
11	19BT019	1901030019	TANMAYA GIRI	Isolation and Characterization of Protease Producing Bacteria from Soil Sample	Mr. B. Rabiprasad	PO2, PO3, PO4, PO7, PO9, PO10, PSO1, PSO2
12	19BT020	1901030020	SARTHAK PUHAN			
13	19BT021	1901030021	SONTI PHANI KIRAN			
14	19BT031	1901030024	ABHISHEK SAHOO			

15	19BT033	1901030025	SHEKHAR RAJBANSHI			
16	19BT035	1901030027	DIPA SHAH	A case study on fortification of Mushrooms with Vitamin – D through ultraviolet irradiation	Dr. Diptikanta Acharya	PO1, PO2, PO4, PO5, PO9, PO10, PSO1, PSO2
17	19BT034	1901030026	RICHA VERMA			
18	19BT003	1901030003	ASHMA PARVEEN			
19	19BT015	1901030015	SAI SRISTI PANDA			
20	19BT016	1901030016	SONALI PATRO			
21	19BT017	1901030017	NEETU PRIYA MINZ			
22	19BT018	1901030018	SUBHENDU PRASAD BEHERA	DEVELOPMENT OF ANTIVIRAL AND ANTIBACTERIAL NASAL GEL	Mrs. Sagarika Satapathy	PO1, PO2, PO4, PO5, PO9, PO10, PSO1, PSO2
23	19BT007	1901030007	MULAKALA KUSUMA CHOUDHURY			
24	19BT008	1901030008	GARAPATI SOMYA			
25	19BT004	1901030004	SOUVIK KUILA			
26	19BT022	1901030022	KINJARAPU ROSHINI			
27	19BT012	1901030012	SANDEEP BISOI			



Head of Department

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

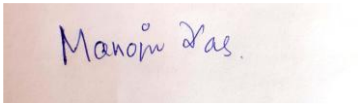
DEPARTMENT OF BIOTECHNOLOGY

LIST OF STUDENTS PROJECT BATCH: 2020-2024

SL NO	Roll No.	REGD NO	NAME OF THE STUDENT	TOPIC NAME	NAME OF THE SUPERVISOR	POs/PSOs
1	20BT001	20UG010044	DEEPAK SAMAL	NANO GREEN: EXPLORING THE SYNERGISTIC EFFECTS OF Zn NANOFERTILIZERS ON PLANT HEALTH	Dr. MANOJA DAS	PO1, PO3, PO4, PO5, PO7, PO9, PO10, PSO1, PSO2
2	20BT002	20UG010045	ARPITA SAHU			
3	20BT003	20UG010046	CHETANSI PATEL			
4	20BT004	20UG010047	PRIYANKA PRIYADARSHINI			
5	20BT005	20UG010048	RINKI MAHARANA			
6	20BT006	20UG010049	SHAIK SHARMILA BEGUM			
7	20BT007	20UG010050	DOLLY KHORA	EVALUATION OF ANTIMICROBIAL ACTIVITY OF SECONDARY METABOLITES ISOLATED FROM MIMOSA PUDICA L.	Dr. DIPTIKANTA ACHARYA	PO2, PO3, PO4, PO7, PO9, PO10, PSO1, PSO2
8	20BT008	20UG010051	GOUTAM JHA			
9	20BT009	20UG010052	PRIYANKA PANIGRAHI			
10	20BT010	20UG010053	MRINALINI BHANU			
11	20BT012	20UG010055	T SOUMYASHREE			
12	20BT013	20UG010056	JAGADISH BISWAL	COMPARATIVE ANALYSIS OF MILLETS	DR. B RABI PRASAD	PO2, PO3, PO4, PO7, PO9,
13	20BT014	20UG010057	M.ESHA SHRIYA DORA			

14	20BT 016	20UG010 059	JESSICA SAMAL			PO10, PSO1, PSO2
15	20BT 018	20UG010 061	SASWAT PRADHAN			
16	20BT 019	20UG010 062	CHOUDHURY AYUSH NANDA			
17	20BT 020	20UG010 063	MANAS RANJAN KHADIA	DEVELOPMENT AND EXPLORATION OF LARVICIDAL POTENTIAL OF NATURAL BIOLOGICAL SUBSTANCES AGAINST MOSQUITO LARVAE	Mrs. SAGARIKA SATAPATHY	PO1, PO2, PO4, PO5, PO9, PO10, PSO1, PSO2
18	20BT 021	20UG010 064	ROZINA PAIKRAY			
19	20BT 022	20UG010 065	JYOTIRMAYEE MAHANTA (F)			
20	20BT 023	20UG010 066	LIZASHREE ROUT			
21	20BT 025	20UG010 068	SHREYASKA MUND (F)			
22	20BT 027	20UG010 070	G SAI SADWIKA (F)	CHICKEN SKIN OIL FOR SKIN BURNS SCARS	Dr. T. GAYTRI	PO1, PO2, PO4, PO5, PO9, PO10, PSO1, PSO2
23	20BT 029	20UG010 072	PRANJAL MUND (F)			
24	20BT 030	20UG010 073	PRIYANKA PRIYADARSINI LENK A (F)			
25	20BT 031	20UG010 074	ABHISHEK PATTNAIK (M)			
26	20BT 033	20UG010 076	ANKITA BANDYOPADHYAY (F)			
27	20BT 035	20UG010 077	GAURI SHANKAR BEHERA (M)	SYNERGISTIC PLANT EXTRACTS AND GREEN SYNTHESIZE	Dr. MANOJA DAS	PO1, PO2, PO4, PO5, PO9,
28	20BT 039	20UG010 081	IPSITA MISHRA (F)			

29	20BT 041	20UG010 083	PANKAJ DAS (M)	D NANOPARTI CLE FOR HAIRFALL CONTROL AND HAIR GROWTH		PO10, PSO1, PSO2
30	20BT 042	20UG010 084	KRISHNA BIHARI KUMAR (M)			
31	20BT 044	20UG01 LE12	SOURAV NAYAK (LE)(M)			

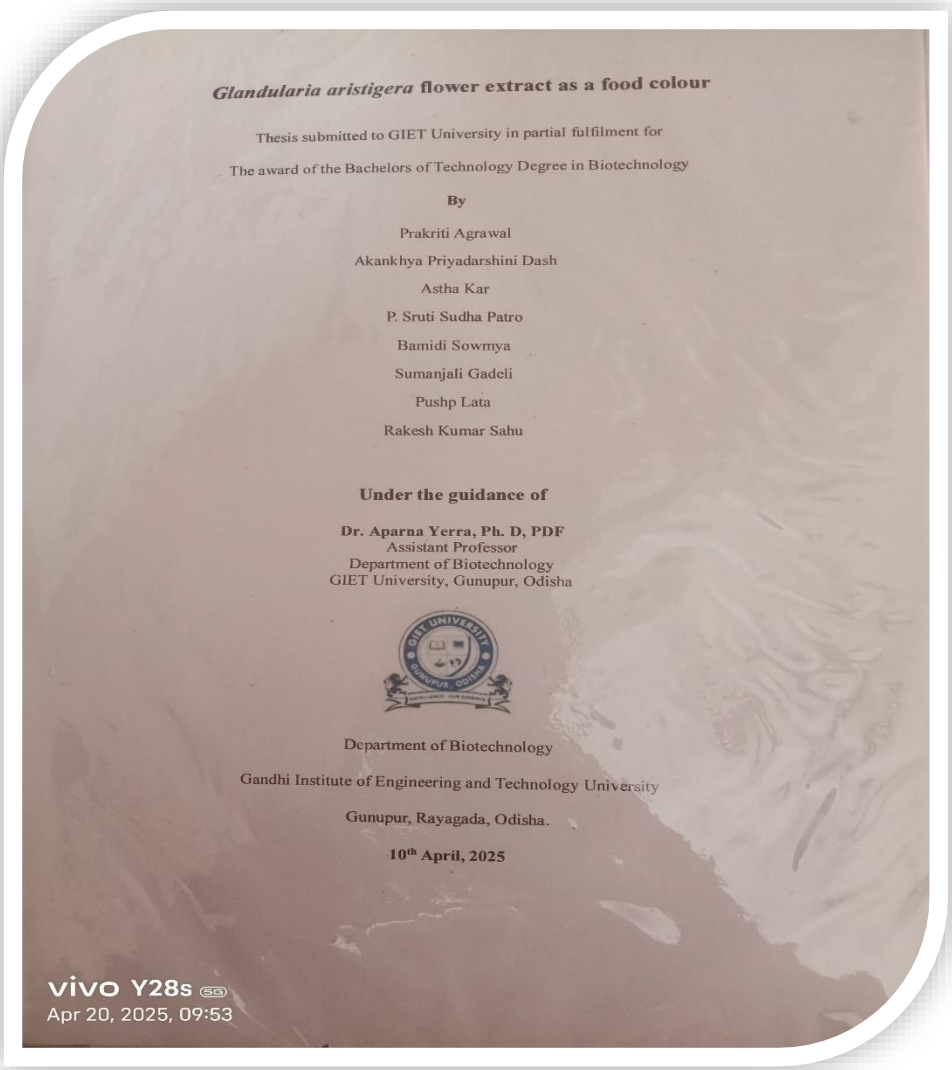


Head of Department

2.2.4 Final Project Evaluation & Viva

- Conducted by the HoD, project guides, and an internal/external expert panel.
- Evaluation is based on innovation, implementation quality, technical depth, and report submission.
- Documents Maintained:
  - Final Project Evaluation Score Sheet.
  - CO-PO Attainment Report.
  - Final Submission Report with recommended modifications.

2.2.4 Sample copy of Project thesis submitted by B. Tech 8th Semester students for award of B. Tech Degree



***Glandularia aristigera* flower extract as a food colour**

Thesis submitted to GIET University in partial fulfilment for

The award of the Bachelors of Technology Degree in Biotechnology

By

Prakriti Agrawal

Akankhya Priyadarshini Dash

Astha Kar

P. Sruti Sudha Patro

Bamidi Sowmya

Sumanjali Gadeli

Pushp Lata

Rakesh Kumar Sahu

Under the guidance of

Dr. Aparna Yerra, Ph. D, PDF
Assistant Professor
Department of Biotechnology
GIET University, Gunupur, Odisha

Department of Biotechnology

Gandhi Institute of Engineering and Technology University

Gunupur, Rayagada, Odisha.

10th April, 2025

2.3 INTERNSHIP/INDUSTRIAL TRAINING

2.3.1 PROCESS OF INTERNSHIP/INDUSTRIAL TRAINING FOR STUDENTS

Internships and industrial training play a vital role in Outcome-Based Education (OBE) by bridging the gap between theoretical knowledge and practical applications. The structured process ensures that students gain hands-on experience, industry exposure, and relevant competencies necessary to become industry-ready professionals.

Planning of Internship

The students are encouraged to take up intern ship programs during their semester break. Faculty members give their guidelines, suggestions and scope and contact details of an internship. They also help the students by interacting with the industrial experts, provide the students recommendation letters and other necessary supports. The alumni coordinator constantly interacts with alumni those who are working in the industries and request them to provide necessary guide lines and supports for their junior's internship

- Summer training is a compulsory credit course to be completed in the summers after 2nd year. The duration is 30 days.
- The objectives of the internship are mapped with Program Outcomes (POs) and Program-Specific Outcomes (PSOs) to ensure alignment with academic learning and industry demands
- Some of the industries / Institutes where the students regularly go for summer training include but are not limited to SMDRC, DBT-ILS, SHRM labs.
- After the Third Year, the students go for a 5 month Co-op Internship to various Industries. The duration is long enough for them to be given some live project work and most industries do take advantage.

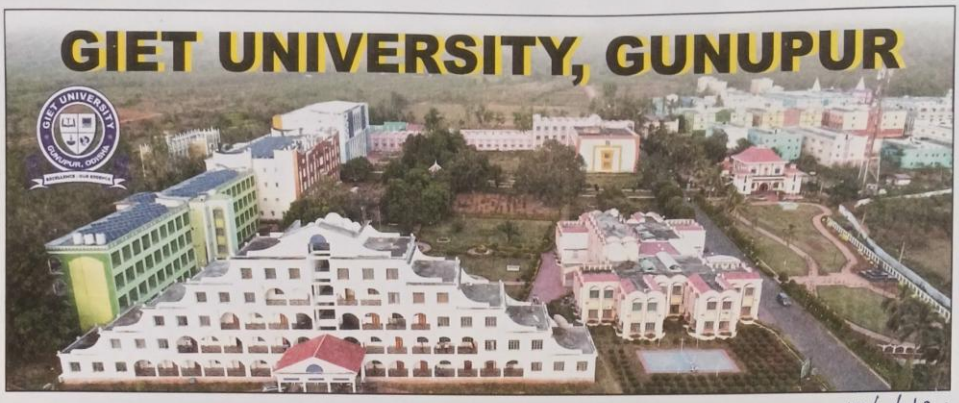
Approval Process for Internship

- Students register for internships through the requisition letter from the HoD.

- The selection process is based on academic performance, skillset, and industry requirements, which may include interviews, aptitude tests, or technical assessments.

• Faculty mentors write the requisition letter to the industry for permission to carry out the internship at their respective industry or institute.

2.3.1 Sample copy of the requesting letter sent to Industry for request of Internship to students



Ref. No.....

Date: 15/04/2025

To

The HR / Director,

APITORIA PHARMA PVT.LTD,

Unit-4, Pydibeemavaram,

Srikakulam district.

Subject: Requesting for Summer internship of students.

Dear Sir,

With my reference to our discussion on 14th April 2025 regarding the offering of internship to our students in your esteemed Industry.

We are sending our students for internship to your reputed Industry to get exposure on latest progresses of the domain and to have Hands-on training on various techniques of Biotechnology.

In this connection, I would like to suggest five of our competent students of B. Tech Biotechnology of 6th Semester of our Department for the same.

The duration of the internship shall be for preferably one month i.e., from 15th May to 14th June 2025 or in your convenient time period. I request you, kindly consider the above students for the Internship at your esteemed Industry.

Looking forward for a positive response in this regard.

Yours Faithfully, 15/4/25
Dr. Y. Aparna
Assistant. Professor

HOD. 15/4/2025
Dr. Manoja Das
Head
Department of Biotechnology
GIET University, Gunupur
Odisha-765022

NAAC 'A' Grade

GANDHI INSTITUTE OF ENGINEERING & TECHNOLOGY UNIVERSITY
Gunupur - 765022, District: Rayagada, Odisha, India, www.giet.edu
Approved by Govt. of Odisha

NBA Accredited (CSE, MECH, CHEM, AEIE & EEE)

Learning Process

- Students undergo structured training according to an industry-defined curriculum.
- The training focuses on technical skills, professional skills, and project-based learning.
- Periodic evaluations, including progress reports and mentor feedback, track students' learning and engagement.

2.3.2 INDUSTRIAL TRAINING/INTERNSHIPS DETAILS

Internships and industrial training contribute significantly to achieving Program Outcomes (POs) and Program-Specific Outcomes (PSOs). This structured mapping helps measure the effectiveness of industry exposure in engineering education and ensures that students acquire essential competencies.

GIET UNIVERSITY, GUNUPUR
SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

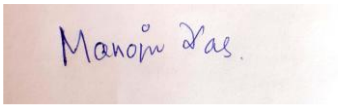
STUDENT INTERNSHIP/TRAINING/WORKSHOP

2024-2025				
Sl. No.	**Name of the Student**	**Program**	**Organized By**	
1.	Adarsh Kumar Sahu	Internship	SMDRC, Visakhapatnam	PO2, PO3, PO5, PO6, PO7, PO9, PO10, PSO1, PSO2
2.	Abinash Sahoo	Internship		
3.	Rudra Narayan Behera	Internship		
4.	Sonup Kumar Naik	Internship		
5.	Suhani Patnaik	Internship	SMDRC, Visakhapatnam	PO2, PO3, PO5, PO6, PO7, PO9, PO10, PSO1, PSO2
6.	Prache bal	Internship		
7.	Bhumika Patnaik	Internship		
8.	Lipsa pradhan	Internship		
9.	Trushna rani Nahak	Internship	SMDRC, Visakhapatnam	PO2, PO5, PO6, PO7, PO8, PO10, PSO1, PSO2
10.	Priyambada	Internship		
11.	Abhilipsa ratha	Internship		
12.	Ipsita Ratha	Internship		
13.	Geetanjali JAYAPURIA	Internship		

14.	Susree Somya	Internship	Obvez labs, Hyderabad	PO2, PO3, PO5, PO6, PO7, PO9, PO10, PSO1, PSO2
15.	Smruti Jena	Internship		
16.	Sipra Patra	Internship		
17.	Aradhana Minz	Internship		
18.	Abhisikta Mahapatra	Internship		
19.	Alaka Satapathy	Internship		
20.	Madhusmita Das	Internship	DBT-ILS, Bhubaneswar	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
21	Nilu kumari Padhy	Internship		
22	Samikshya Mund	Internship		
23	Gyana Ranjan Mallick	Internship		
24	Pratikshya Mund	Internship	DBT-ILS, Bhubaneswar	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
25	Subhasmita Swain	Internship		
26	Sai Sudha Patro	Internship		
27	Aroshish Patro	Internship		

28	Bansita Lenka	Internship	Exsure Private Limited - KIITS TBI.	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
29	Divya nandini Gumangoo	Internship		
30	Sandhya rani Sethi	Internship		
31	Puja Rani Barik	Internship	SHRM labs, Kolkata, wb.	PO3, PO4, PO5, PO6, PO7, PO8, PO10, PSO1, PSO2
32	Soumya Sucharita Mishra	Internship		
33	Shrestha Simran Jodder	Internship		
34	Muskan Panda	Internship		
35	Dinesh Harichandan Singh Samal	Internship		
36	Sriya Laxmi Dora	Internship	SHRM labs, Kolkata, wb.	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
37	Archita Mishra	Internship		
38	Amaya Ranjan Mohapatra	Internship		
39	Abhay panda	Internship		
40	Praveen Kumar Malik	Internship		
41	Tejaswi Meher	Internship		

42	Ankit Meher	Internship	SHRM labs, Kolkata, wb.	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
43	Khetramani naik	Internship		
44	Biswamohan Nayak	Internship		
45	Srusti Ranjan	Internship		
46	Md Intakhab Alam	Internship	SHRM labs, Kolkata, wb.	PO3, PO4, PO5, PO6, PO7, PO8, PO10, PSO1, PSO2
47	Nitish Kumar Patel	Internship		
48	Supartijna Tripathi	Internship		
49	Nikhil Raj	Internship		
50	Mahesh Senapati	Internship		
51	Simran Tankar	Internship	RCOE-NPT	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
52	Soumyashree Bastia	Internship		
53	Sruti Sneha Barik	Internship		
54	Anwesk Kumar Panda	Internship		
55	Sibasish Mohapatra	Internship		
56	Aniket Patro	Internship		
57	P. Koushik	Internship	Centurion University	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2



HoD BIOTECHNOLOGY

2.3.3 STUDENT FEEDBACK ON TRAINING/INTERNSHIPS AND ITS ANALYSIS

To enhance the effectiveness of industrial training programs, institutions implement a structured feedback mechanism to assess student experiences, identify gaps, and improve future internships. The feedback collection and analysis process follow these steps:

Designing the Feedback Form

The feedback form captures both qualitative and quantitative aspects of the internship.

Key areas include: Relevance of training to academic curriculum and career goals.

- Skills and technical knowledge gained.
- Industry exposure and real-world application of concepts.
- Quality of mentorship from faculty and industry supervisors.
- Challenges encountered and recommendations for improvement.
- Overall internship experience rating.

Analysis of Student Feedback

- **Quantitative Analysis:** Ratings and numerical data on learning effectiveness, supervision, and industry exposure.
- **Qualitative Analysis:** Open-ended responses highlighting strengths, challenges, and suggestions.
- **Trend Identification:** Recurring positive aspects and areas requiring improvement.

2.4 Seminar and Mini/Micro Projects

Seminars and mini/micro projects are integral components of Department of Biotechnology, designed to enhance research aptitude, critical thinking, technical knowledge, and practical skills among students. These activities are embedded in the academic framework to ensure holistic development and alignment with Program Outcomes (POs) and Program-Specific Outcomes (PSOs). The structured process of conducting seminars and projects follows a well-defined methodology to ensure students derive maximum learning benefits.

2.4.1. MAPPING OF SEMINARS PRESENTED BY STUDENTS

Process of Conducting Seminars

1. **Topic Selection:** Students select seminar topics based on current technological advancements, industry trends, and personal interest.

2. **Research article selection:** The student is encouraging to present research articles. In this context, the student will be able to understand the update scientific knowledge's and critic way of thinking the scientific knowledge. The faculty will be supported to make students the research articles.

3. **Execution:** Students conduct in-depth research, analyzing case studies, scientific papers, and technological developments to build expertise in the chosen topic.

4. **Presentation:** Findings are presented in a structured format to an audience comprising faculty members and peers, followed by a Q&A session to assess the depth of understanding and research quality.

2.4.2 List of Student seminars with their topics and POs / PSOs

GIET UNIVERSITY, GUNUPUR
DEPARTMENT OF BIOTECHNOLOGY
BATCH: 2022-2026
LIST OF SEMINAR DELIVERED BY STUDENTS

Sl No	Roll No	Regn. No	Name Of The Student	Date	Seminar Topic	POs/PSOs
1	22BT001	22UG010012	Chinmaya Das	3/02/2025	Dna Packaging	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
2	22BT002	22UG010013	Ashutosh Dora	3/02/2025	Dna Replication	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
3	22BT003	22UG010014	Nikhil Raj	3/02/2025	Colon Cancer	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
4	22BT004	22UG010015	Shrestha Simran Jodder	3/02/2025	Bioweapons	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
5	22BT005	22UG010016	Amaya Ranjan Mohapatra	10/02/2025	Polymers	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
6	22BT006	22UG010017	Praveen Kumar Padhi	10/02/2025	Vaccines	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2

7	22BT007	22UG010018	Puja Rani Barik	10/02/2025	Bio Safety	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
8	22BT008	22UG010019	Archita Mishra	10/02/2025	Bio Leaching	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
9	22BT009	22UG010020	Sivaratri Jaswant	17/02/2025	Dna Repair	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
10	22BT010	22UG010021	Srusti Ranjan Dash	17/02/2025	Tissue Culture	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
11	22BT011	22UG010022	Yeddu Navya	17/02/2025	Biometrics	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
12	22BT012	22UG010023	Cheeneni Devipriya	17/02/2025	Gene Therapy	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
13	22BT013	22UG010024	Sonupkumar Naik	24/02/2025	Biochips	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
14	22BT014	22UG010025	Kenguva Harsita	24/02/2025	Protein Profiling	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
15	22BT015	22UG010026	Rudra Narayan Behera	24/02/2025	Growth Factors	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
16	22BT016	22UG010027	Adarsh Kumar Sahu	24/02/2025	Plant Hormone	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
17	22BT017	22UG010028	Muskan Panda	01/03/2025	Gems	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
18	22BT018	22UG010029	Dinesh Harichandan Singh Samal	01/03/2025	Rflp	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
19	22BT019	22UG010030	Subhasmita Swain	01/03/2025	Motif Design	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
20	22BT020	22UG010031	Lipsa Pradhan	01/03/2025	Gene Sequenceing	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
21	22BT021	22UG010032	Amreet Kumar Nayak	07/03/2025	Microbial Fuel Cell	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
22	22BT022	22UG010033	Kishan Bharadwaj Panda	07/03/2025	Biofuel	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
23	22BT023	22UG010034	Bansita Lenka	07/03/2025	Cell Banking	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1

24	22BT024	22UG010035	Pratik Sankalp Panda	07/03/2025	Molecular Wires	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
25	22BT025	22UG010036	Sandhya Rani Sethi	15/03/2025	Proteomics	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
26	22BT026	22UG010037	Soumya Sucharita Mishra	15/03/2025	Microbial Growth	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO10, PO11, PO12, PSO1, PSO2
27	22BT027	22UG010038	Nilu Kumari Padhy	15/03/2025	Alcohol Fermentation	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
28	22BT028	22UG010039	Pratikshya Mund	18/03/2025	Bio Leaching	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
29	22BT029	22UG010040	Sriya Laxmi Dora	18/03/2025	Dna Repair	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
30	22BT030	22UG010041	Samikshya Mund	18/3/2025	Tissue Culture	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
31	22BT031	22UG010042	Mahesh Senapati	20/3/2025	Biometrics	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO10, PO11, PO12, PSO1, PSO2
32	22BT032	22UG010043	Ashok Mutuka	20/3/2025	Gene Therapy	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
33	22BT033	22UG010044	Ankit Meher	20/3/2025	Biochips	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
34	22BT034	22UG010045	Suhani Patnaik	22/3/2025	Protein Profiling	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
35	22BT035	22UG010046	Bhumika Patnaik	22/3/2025	Growth Factors	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
36	22BT036	22UG010047	Nitish Kumar Patel	22/3/2025	Plant Hormone	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
37	22BT037	22UG010048	Abinash Sahoo	24/3/2025	Gems	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
38	22BT038	22UG010049	Abhilipsa Ratha	24/3/2025	Rflp	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
39	22BT039	22UG010050	Jemadei Nalla	24/3/2025	Motif Design	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
40	22BT041	22UG010052	Alaka Satapathy V	25/3/2025	Gene Sequenceing	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1

41	22BT042	22UG010053	Geetanjali Jayapuria	25/3/2025	Microbial Fuel Cell	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
42	22BT043	22UG010054	Abhishek Malakar	25/3/2025	Biofuel	PO1, PO2, PO6, PO7, PO8, PO10, PSO1, PSO2
43	22BT044	22UG010055	A.Siprarani Patra	26/3/2025	Cell Banking	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO10, PO11, PO12, PSO1, PSO2
44	22BT045	22UG010056	Susree Somya	26/3/2025	Molecular Wires	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
45	22BT046	22UG010057	Prachee Bal	26/3/2025	Proteomics	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
46	22BT047	22UG010058	Abhisikta Mahapatra	27/3/2025	Microbial Growth	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
47	22BT048	22UG010059	Ipsita Ratha	27/3/2025	Alcohol Fermentation	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
48	22BT049	22UG010060	Md. Intakhab Alam	27/3/2025	Dna Packaging	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO10, PO11, PO12, PSO1, PSO2
49	22BT050	22UG010061	Priyambada Priyadarshini Behera	1/4/2025	Dna Replication	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
50	22BT051	22UG010062	Swapna Sarthak Mohanty	1/4/2025	Colon Cancer	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
51	22BT052	22UG010063	Biswamohan Nayak	1/4/2025	Bioweapons	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
52	22BT054	22UG010065	Bobby Sabar	2/4/2025	Polymers	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
53	22BT055	22UG010066	Trushna Rani Nahak	2/4/2025	Vaccines	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO10, PO11, PO12, PSO1, PSO2
54	22BT056	22UG010067	Praveen Kumar Mallik	2/4/2025	Bio Safety	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
55	22BT057	22UG010068	Abhay Panda	3/4/2025	Proteomics	PO1, PO2, PO3, PO4, PO5, PO7, PO8, PO10, PO11, PO12, PSO1, PSO2

56	22BT058	22UG010069	Bansidhar Huika	3/4/2025	Rna Interference	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
57	22BT059	22UG010070	Divya Nandini Gamango	3/4/2025	Cell Banking	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
58	22BT060	22UG010071	Shiva Prasad Pattnaik	4/3/2025	Human Genome Project	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
59	22BT061	22UG010072	Abhilipsa Sahu	4/3/2025	Enzyme Metabolism	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
60	22BT062	22UG010073	Aroshish Patra	4/3/2025	Genetically Modified Foods	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1
61	22BT078	22UG01LE01	P.Saisudha Patro	5/5/2025	Designer Babies	PO1, PO2, PO3, PO4, PO5, PO6, PO7, PO10, PO11, PSO1
62	22BT079	22UG01LE02	Sujit Gouda	5/5/2025	Biochips	PO1, PO2, PO3, PO4, PO5, PO7, PO10, PSO1

2.5. SWAYAM/NPTEL/MOOC/SELF-LEARNING

Massive Open Online Courses (MOOCs) offered through platforms like SWAYAM, NPTEL, Coursera, edX, Udacity, and Udemy provide flexible, high-quality learning opportunities for students and professionals. These platforms enhance Outcome-Based Education (OBE) by enabling students to acquire additional skills, industry-relevant knowledge, and domain expertise beyond traditional classroom teaching.

Mapping MOOCs with Program Outcomes (POs) and Program-Specific Outcomes (PSOs) ensures that these certifications contribute effectively to technical, analytical, and professional competency development, aligning with NBA accreditation requirements.

2.6.1. PROCESS OF IMPLEMENTING MOOCS IN CURRICULUM AND PO-PSO MAPPING

Step 1: Selection of MOOCs Based on Learning Objectives

- Domain-specific and interdisciplinary courses relevant to the curriculum are identified.

- Platforms providing industry-recognized certifications (SWAYAM, NPTEL, Coursera, etc.) are selected.

Step 2: Integration into Curriculum

- MOOCs are allowed as elective courses for credit transfer.

- Students are encouraged to complete a minimum required number of courses per semester.

Step 3: Assessment and PO-PSO Mapping

Students are evaluated based on: Course completion certificates.

Assignment scores and project submissions.

Application of acquired skills in mini-projects, lab experiments, and internships.

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
DEPARTMENT OF BIOTECHNOLOGY

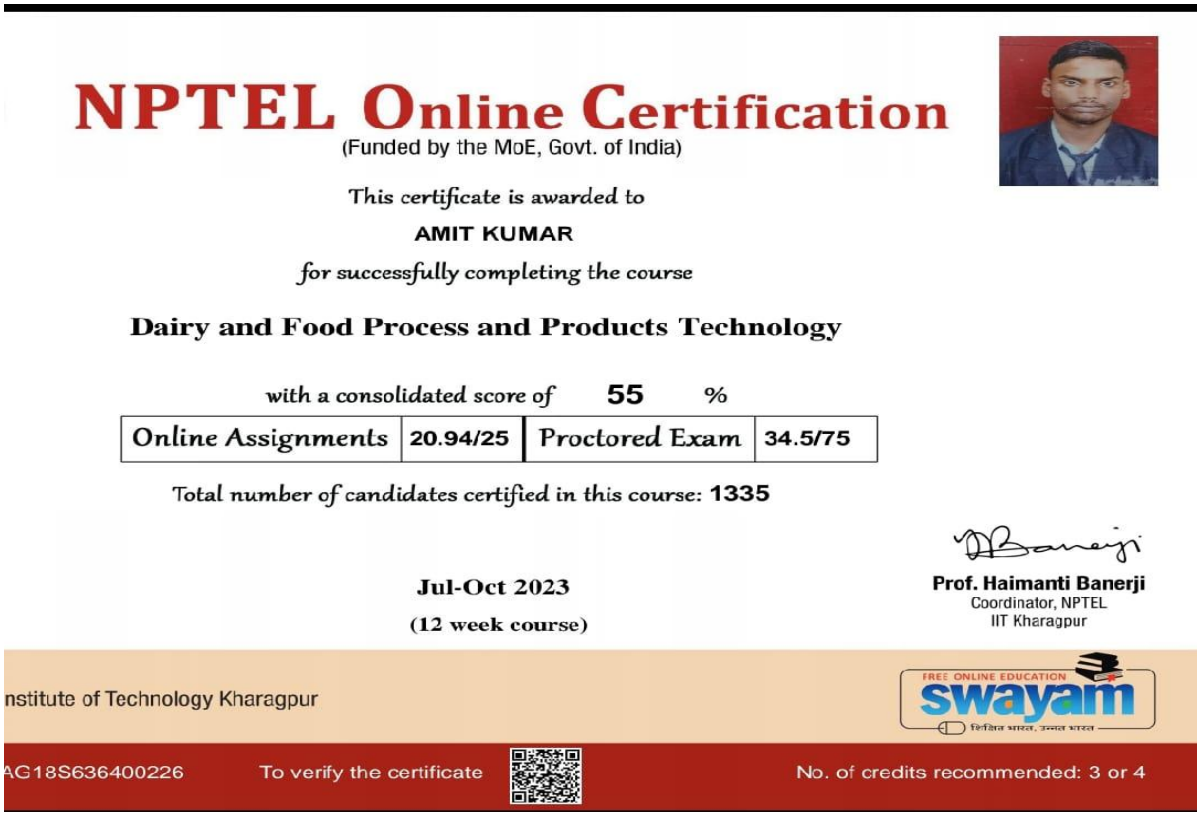
LIST OF STUDENTS Registered/ completed NPTL courses

Name	Registration number	Roll number	NPTEL Course Names	Status	Date pf registration
Sruti Sneha Barik	23UG010014	23BT015	Neuroscience	Completed	2/19/2024
Anisha Behera	23BT027	23BT027	Introduction to cell biology	Completed	8/19/2024
Soumyashree Bastia	23UG01033	23BT036	Enzyme sciences and technology	Ongoing	2/26/2025
Ritu	23UG010047	23BT052	bioengineering an interface with biology and medicine	Ongoing	2/11/2025
Babli Kumari	**23UG010048**	23BT053	RNA Biology	Ongoing	26/02/2025
Honey Kumari	23UG010049	23BT054	Computational Genomics	Ongoing	1/2/2025
Chinmay Das	22UG010012	22BT001	Microsensors, Implantable Devices and Rodent Surgeries for Biomedical Applications	Ongoing	28-Feb-25

Amaya Ranjan Mohapatra	22UG010016	22BT005	Introduction to Environmental Engineering and Science Fundamentals and sustainability Concepts	completed	22/01/224
Archita Mishra	22UG010019	22BT008	Introduction to environmental engineering and science fundamentals and sustainability concept	Completed	22-Jan-24
Srusti Ranjan Dash	22UG010021	22BT010	Forest management	Complete	1/22/2024
Yeddu Navya	22UG010022	22BT011	Cloud Computing And Distributed System	Completed	19-Feb-24
cheeneni devi priya	22UG010023	22BT012	cloud computing and distributed systems	completed	2/19/2024
Lipsa Pradhan	22UG010031	22BT020	RNA Biology	Completed	1/22/2024
Bansita Lenka	22UG010034	22BT023	Structural Biology	completed	24-Jan
Sriya Laxmi Dora	22UG010040	22BT029	Pharmacognosy and Metabolic Engineering	Completed	22-Jan-24
Ankit Meher	22UG010044	22BT033	1. Introduction to Cell Biology ; 2.Machine Learning for Soil and Crop Management	1.Completed; 2.Completed	1. 21/Aug/2023; 2. 22/Jan/2024
Abhilipsa Ratha	22UG010049	22BT038	Modern Food Packaging Technologies: Regulatory Aspects and Global Trends , food science and technology	1completed, 1ongoing	28.02.2025
Alaka Satapathy	22UG010052	22BT041	Basic Course of Ornithology	1 completed	16.02.2024
Geetanjali Jayapuria	22UG010053	22BT042	Introduction of cell biology,RNA biology,microsers implantable device & Rodent for biomedical	2 completed,1 ongoing	28-Feb-25
A. Siprarani patra	22UG010055	22BT044	Cloud Computing	Completed	24-Jul-23
Abhisikta Mahapatra	22UG010058	22BT047	Basic Course of Ornithology	1 completed	15.02.2024

Priyamba da Pr. Behera	22UG010 061	22BT050	Blockchain and it's application, Organ Printing	2 Completed	Jan 22, 2024 ; July 22, 2024
Trushna Rani Nahak	22UG010 066	22BT055	Food Science and technology	Ongoing	28-Feb-25
Abhay Panda	22UG010 068	22BT057	Introduction to Cell Biology , Introduction to Bio mimicry	2 Completed	21/08/2023 , 22/07/2024
Smruti Samaptika Jena	22UG010 076	22BT065	Cloud Computing	Completed	24-Jul-23
Nisha kumari	22UG010 078	22BT067	Data Analytics with python	completed	12/2/2024

2.6.2 Sample copy of student online course certificates



NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

AMIT KUMAR

for successfully completing the course

Dairy and Food Process and Products Technology

with a consolidated score of 55 %

Online Assignments	20.94/25	Proctored Exam	34.5/75

Total number of candidates certified in this course: 1335

Jul-Oct 2023

(12 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

nstitute of Technology Kharagpur

swayam

AG18S636400226 To verify the certificate No. of credits recommended: 3 or 4

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

AKANKHYA PRIYADARSHINI DASH

for successfully completing the course

Plant Developmental Biology

with a consolidated score of **46** %

Online Assignments	14.17/25	Proctored Exam	31.5/75

Total number of candidates certified in this course: **284**

Prof. Sanjeev Manhas
Coordinator, Continuing Education Centre
IIT Roorkee

Jan-Feb 2023
(4 week course)

Prof. Priti Maheshwari
NPTEL Coordinator
IIT Roorkee

Indian Institute of Technology Roorkee

Roll No: NPTEL23BT24S34620045 To validate the certificate No. of credits recommended: 1 or 2

NPTEL Online Certification

(Funded by the MoE, Govt. of India)

This certificate is awarded to

BAMIDI SOWMYA

for successfully completing the course

Enzyme Sciences and Technology

with a consolidated score of **47** %

Online Assignments	16.85/25	Proctored Exam	30/75

Total number of candidates certified in this course: **232**

Prof. T. V. Bharat
Head, Centre for Educational Technology
NPTEL Coordinator, IIT Guwahati

Jan-Apr 2023
(12 week course)

Indian Institute of Technology Guwahati

Roll No: NPTEL23BT05S43650088 To validate the certificate No. of credits recommended: 3 or 4

2.6 Steps Taken for Enhancing Industry Institute Partnerships (15)

2.6 Industry tour conducted for B. Tech students

The Department of Biotechnology conducts study tour the students of B. Tech to explore the students to the real-life world. The student will experience the real-time experience.

2.6.1 Procedure carried out to conduct Industrial Visit

Department **will** send the request letter to different industries/ Organization for the benefit of students and faculty members. Besides that, other activities like

1. Industry Personnel are included as Members of BOS who get involved in Curriculum Development.
2. Industry personnel also provide technical assistance for collaborative projects.
3. Students are sent for Industrial Visits once in a semester.
4. Industrial personnel are regularly invited to deliver expert talks.
5. R&D/Consultancy Assignments from Industries are taken up.

Industrial Visit of B. Tech students with Faculty members to Apitoria (Formally: Aurobindo Pvt Ltd, Visakhapatnam)

Criterion 3: Outcome-Based Assessment (120)

3.1. Evaluation of Continuous Assessment: Assignments, Unit Tests, Mid-Term, etc. (10)

(Describe the process of evaluation followed during continuous assessment to maintain quality of assessment; constructive alignment of questions with COs and hence POs/ PSOs. Details to be kept in course files for evaluation.)

The evaluation process for students is based on Continuous Internal Examinations and Semester End Semester Examinations), class test and assignments/ seminars.

The major evaluation process for students are divided into two key components:

- **Continuous Internal Examinations (CIE)**
- **Semester End Semester Examinations (SEE)**

Both the internal and end semester question papers are prepared following Blooms Taxonomy. The subject experts (both internal or external) set the question paper. The sessional examination questions are prepared by the course coordinator which is reviewed by the module and program coordinators of each course and the question is finally approved by the Head of the department and submitted to the Office of Controller of Examinations.

In case of End Semester examinations, the question is either prepared by an Internal Faculty or External Examiner. The questions are reviewed by a committee appointed by the Controller of Examination (CoE) and then finally approved.

Continuous Internal Examinations (CIE):

The **Continuous Internal Examinations** is categorized into three key components: **Assignments, Class Tests and Cycle Test.** Each playing a crucial role in evaluating students' learning and academic progress.

I. Cycle Test

- There are two internal examinations conducted per semester i.e Cycle Test-I and Cycle Test-II. Each Cycle Test question papers cover 2 to 3 units (one half of the syllabus) for 30 marks. The internal examinations are of 1hour 15 minutes duration.

- To successfully pass a course, a student must secure a minimum of 40% marks in Cycle Test. The student must obtain at least 12 marks out of 30 in Cycle Test.
- Question papers are set as per the University exam pattern so that the student can learn how to manage his time during University examination.
- Cycle test can count for **50%** of the internal assessment
- This structured evaluation process aligns with academic and accreditation standards, ensuring students are assessed fairly and comprehensively while maintaining academic rigor and professional competence.

II. Class Tests:

- These assessments are conducted periodically and consist of short, tricky, problem-solving, or theoretical questions designed to evaluate students' conceptual understanding, critical thinking, and application skills.
- Their primary purpose is to verify the students' understanding level in the class and identify areas where they may need improvement. By incorporating a mix of analytical and knowledge-based questions, these tests ensure that students engage with the subject matter regularly and develop a deeper grasp of the concepts.
- The department conducts two class tests4th and 8th week respectively.
- Each class test examination covers one fourth of the syllabus.
- The class test is conducted for a maximum of 20 marks.
- The duration of the mid-semester examination is one hour and question paper are set to make the student to learn time management.
- Class test can count for **25%** of the internal assessment.
- Additionally, they serve as an important tool for continuous assessment, allowing faculty to monitor progress, provide timely feedback, and implement remedial measures if required.

III. Assignments:

- In every semester, students must complete two assignments per subject, which are a crucial part of the **Continuous Internal Examinations** (CIE) process.
- These assignments contribute to 25% of the total marks in Internal assessment and are assessed by faculty based on predefined evaluation criteria.

- **Mode of Assignment Distribution:** Assignments are provided either in class or through Google Classroom.
- **Submission Deadline:** Students must submit assignments within the specified deadline set by the faculty.
- **Evaluation by Faculty:** Faculty evaluate the assignments based on Course Outcomes (COs) and Program Outcomes (POs). Assignments are assessed using rubrics to ensure fair marking.
- **Student Review & Feedback:** After evaluation, assignments are returned to students for review. Faculty discuss performance and provide constructive feedback. Marks are allotted accordingly.

All three components collectively ensure a comprehensive evaluation system, encouraging continuous learning and improvement.

The marks obtained are uploaded to the ERP system to maintain transparency and inform parents about students' progress.

This structured approach aligns with NBA accreditation requirements, supporting Outcome-Based Education (OBE) by mapping assessments to Course Outcomes (COs) and Program Outcomes (POs).

Question Papers Preparation:

The concerned faculty prepare a question bank for each subject before the commencement of classes of each semester. All previous university exam papers are taken into consideration while setting the question paper. The mid-sem questions are prepared by taking into account of all chapters of the subjects taught during that period.

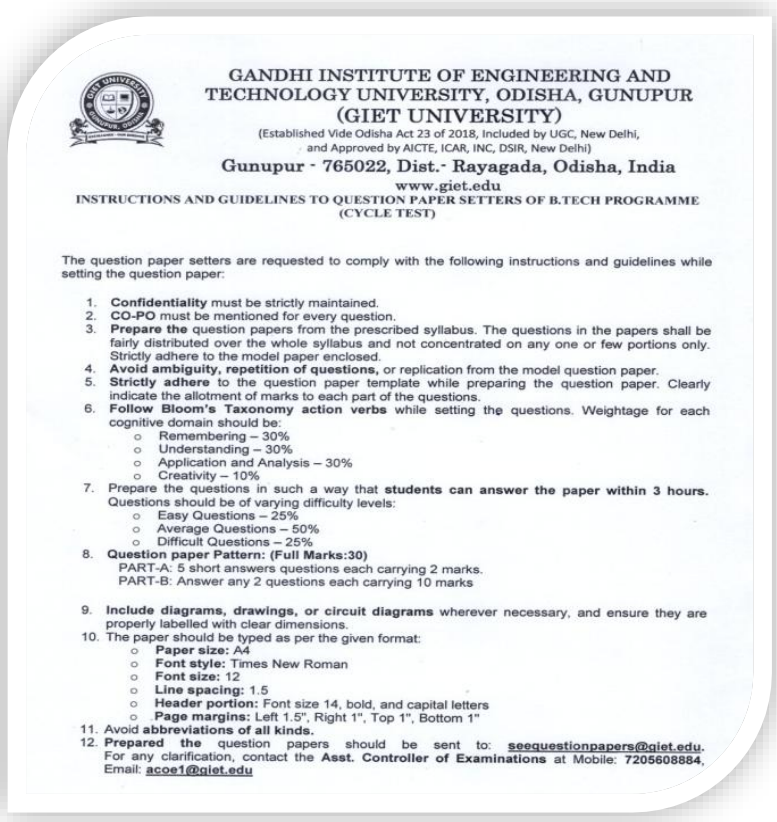
The question paper is prepared by following the standards prescribed by Bloom's taxonomy such as analysis of problems, implementation of modern tools, formulation of problems etc.

The questions will be of three categories:
One third of the questions can be answered by average standard students.

- Another one third of the questions need analysis.
- Remaining one third of the questions are of high standard and can be answered by bright student only.

- Each question of a question paper is mapped with CO and PO of the concerned subject.

Fig. 3.1.1: Instructions and guidelines for Internal Question Paper setting



GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)
(Established Vide Odisha Act 23 of 2018, Included by UGC, New Delhi, and Approved by AICTE, ICAR, INC, DSIR, New Delhi)
Gunupur - 765022, Dist.- Rayagada, Odisha, India
www.giet.edu

INSTRUCTIONS AND GUIDELINES TO QUESTION PAPER SETTERS OF B.TECH PROGRAMME (CYCLE TEST)

The question paper setters are requested to comply with the following instructions and guidelines while setting the question paper:

1. **Confidentiality** must be strictly maintained.
2. **CO-PO** must be mentioned for every question.
3. **Prepare the** question papers from the prescribed syllabus. The questions in the papers shall be fairly distributed over the whole syllabus and not concentrated on any one or few portions only. Strictly adhere to the model paper enclosed.
4. **Avoid ambiguity, repetition of questions,** or replication from the model question paper.
5. **Strictly adhere** to the question paper template while preparing the question paper. Clearly indicate the allotment of marks to each part of the questions.
6. **Follow Bloom's Taxonomy action verbs** while setting the questions. Weightage for each cognitive domain should be:
   - Remembering – 30%
   - Understanding – 30%
   - Application and Analysis – 30%
   - Creativity – 10%
7. Prepare the questions in such a way that **students can answer the paper within 3 hours.** Questions should be of varying difficulty levels:
   - Easy Questions – 25%
   - Average Questions – 50%
   - Difficult Questions – 25%
8. **Question paper Pattern: (Full Marks:30)**
   PART-A: 5 short answers questions each carrying 2 marks.
   PART-B: Answer any 2 questions each carrying 10 marks
9. **Include diagrams, drawings, or circuit diagrams** wherever necessary, and ensure they are properly labelled with clear dimensions.
10. The paper should be typed as per the given format:
    - **Paper size:** A4
    - **Font style:** Times New Roman
    - **Font size:** 12
    - **Line spacing:** 1.5
    - **Header portion:** Font size 14, bold, and capital letters
    - **Page margins:** Left 1.5", Right 1", Top 1", Bottom 1"
11. Avoid **abbreviations of all kinds.**
12. **Prepared the** question papers should be sent to: seequestionpapers@giet.edu. For any clarification, contact the **Asst. Controller of Examinations** at Mobile: **7205608884**, Email: acoe1@giet.edu

Evaluation scheme:

The concerned faculty discusses the answer of the questions in the class after internal assessment test so that a student can evaluate himself regarding his performance.

Internal assessment is conducted per semester considering the assignment, class test and cycle test marks as per the guidelines of the University.

The average marks obtained in a subject by a student is considered for the sending of internal assessment marks to the University.

If a candidate remains absent in the tests, a complementary test is conducted at the department to evaluate his performance and the marks obtained in the test are considered are sent to the University.

Table No.3.1.1: Comparison of Continuous Internal Evaluation under R-19 and R-23

Regulation-19 (R-19)				Regulation-23 (R-23)			
Evaluation type	Evaluation Tool	Max. Marks	Weightage	Evaluation type	Evaluation Tool	Max. Marks	Weightage
Continuous Internal Evaluation (CIE)	Assignments	20	**30%**	Continuous Internal Evaluation (CIE)	Assignments	20	**40%**
	Class Test 1	20			Class test 1	20	
	Class Test 2	20			Class test 2	20	
	Cycle Test 1	30			Cycle test 1	30	
	Cycle Test 2	30			Cycle test 2	30	

Fig. 3.1.2: Sample Question of Cycle test

GIET UNIVERSITY, GUNUPUR – 765022
B. Tech – IV Semester :: **CYCLE TEST - I**
Subject Code – Subject Name: Molecular Biology
(Branch: Biotechnology)

Time: 1.15 hrs Maximum : 30 Marks

PART – A (2 x 5 = 10 Marks)

Q.1. Answer ALL questions		CO #	Blooms Level
a.	Draw the structure of nucleosome?	**CO1**	**L3**
b.	Mention the formula to calculate the Cot curve?	**CO1**	**L2**
c.	What is cryptic gene? Give examples.	**CO1**	**L1**
d.	The leading strand of a DNA molecule has the sequence 5'-CGCATGTAGCGA-3' at the primer formation region. Write the primer sequence required for its replication?	**CO2**	**L3**
e.	A daughter DNA was synthesized from 5'→3' direction. But it is found that some wrong nucleotides were incorporated to newly synthesized DNA strand by DNA Polymerase. How the wrong nucleotides can be corrected during the replication?	**CO2**	**L3**

PART – B (10 x 2 = 20 Marks)

Answer ALL Questions		Marks	CO#	Bloom s Level
2.a.	Explain the Harshey and Chase experiment for the DNA as the genetic material with diagram?	**6**	**CO1**	**L2**
b.	Differentiate between nuclear genome and organeller genome?	**4**	**CO1**	**L1**
	(OR)			
c.	How can you determine the lack of correlation between the genome of organisms? Explain with diagram?	**5**	**CO1**	**L2**
d.	Discuss in details about the mechanism and formation of pseudogenes?	**5**	**CO1**	**L2**
3.a.	Illustrate the techniques to determine the semiconservative model of DNA replication with diagram?	**7**	**CO2**	**L3**
b.	Write notes on DNA Gyrase?	**3**	**CO2**	**L1**
	(OR)			
c.	Discuss the structure and function of DNA Polymerase-III?	**5**	**CO2**	**L2**
d.	How initiation of replication occurs in Prokarayotic DNA? Explain with diagram.	**5**	**CO2**	**L2**

Cycle Test Question Paper for Molecular Biology

GIET UNIVERSITY, GUNUPUR – 765022
B. Tech – III Semester: **CYCLE TEST - I**
Subject Code: 23BBTPC23001
Subject Name: Fundamentals of Biology and Biotechnology
(Branch: Biotechnology)
Time: 1hour 15 minutes Date: 26.08.2024 Maximum : 30 Marks

PART – A (2 x 5 = 10 Marks)

Q.1. Answer ALL questions		CO #	Blooms Level
a.	Justify that cell is the structural and functional unit of life.	CO1	L2
b.	Write down the difference between prokaryotic and eukaryotic cell.	CO1	L3
c.	Write down the structural organization and composition of plant cell wall.	CO1	L2
d.	Justify nucleus is the central controlling unit of a cell.	CO2	L2
e.	Why cell division is essential?	CO2	L1

PART – B (10 x 2 = 20 Marks)

Answer ALL Questions		Marks	CO#	Blooms Level
2.a	Describe the ultra-structure of an animal cell with neat and labelled diagram.	10	CO1	L2
	(OR)			
b.	Explain the fluid mosaic model of cell membrane.	5	CO1	L2
c.	Discuss the structure and functions of mitochondria.	5	CO1	L2
3.a	Describe different phases of cell cycle and add a note on Mitosis.	10	CO2	L3
	(OR)			
b.	Explain the phases and significances of Meiosis-I	10	CO2	L3

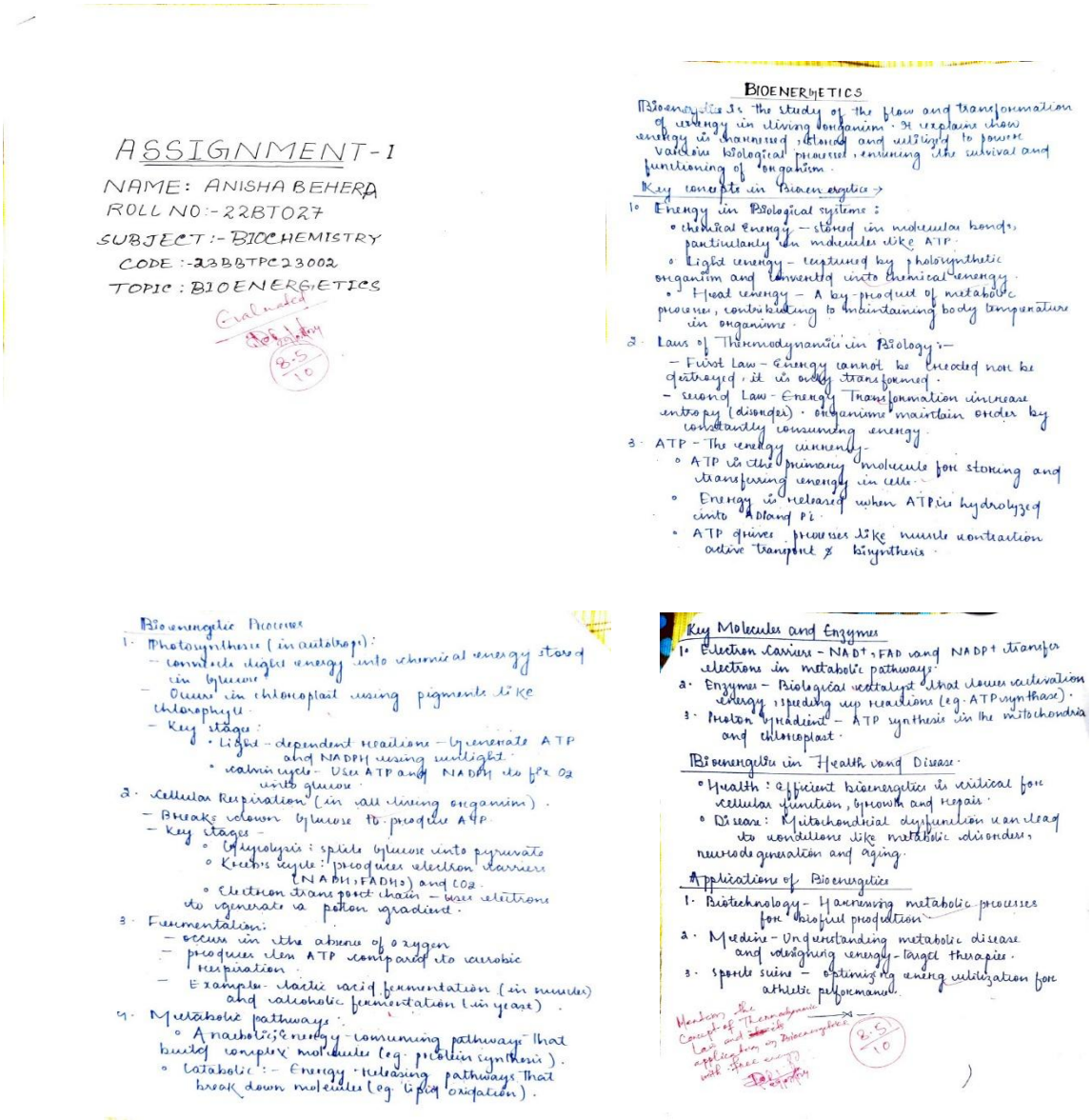
Cycle Test Question Paper for Fundamentals Biology and Biotechnology

Table No.3.1.2: Sample Assignments given to the students

Biochemistry (3rd Semester)

S.No.	Assignments	Topics	Date
1	Assignment –I	• Bioenergetics	25.07.2024
2	Assignment – II	• Photosynthesis	06.09.2024

Fig. 3.1.4: Sample copy of Assignment



ASSIGNMENT-1

NAME: ANISHA BEHERA
ROLL NO:-22BT027
SUBJECT:- BIOCHEMISTRY
CODE:-23BBTPC23002
TOPIC: BIOENERGETICS

Evaluated
Appreciation
8.5/10

BIOENERGETICS

Bioenergetics is the study of the flow and transformation of energy in living organism. It explains how energy is harnessed, obtained and utilized to power various biological processes, ensuring the survival and functioning of organism.

Key concepts in Bioenergetics →

1. Energy in Biological systems :
   - Chemical energy – stored in molecular bonds, particularly in molecules like ATP.
   - Light energy – captured by photosynthetic organism and converted into chemical energy.
   - Heat energy – A by-product of metabolic processes, contributing to maintaining body temperature in organisms.
2. Laws of Thermodynamics in Biology :–
   – First Law – Energy cannot be created nor be destroyed, it is only transformed.
   – second Law – Energy Transformation increase entropy (disorder). organisms maintain order by constantly consuming energy.
3. ATP – The energy currency.
   - ATP is the primary molecule for storing and transferring energy in cells.
   - Energy is released when ATP is hydrolyzed into ADP and Pi.
   - ATP drives processes like muscle contraction active transport & biosynthesis.

Bioenergetic Processes

1. Photosynthesis (in autotrophs) :
   – convert light energy into chemical energy stored in glucose.
   – Occurs in chloroplast using pigments like chlorophyll.
   – Key stages :
     - Light – dependent reactions – generate ATP and NADPH using sunlight.
     - calvin cycle – Uses ATP and NADPH to fix CO_2 into glucose.
2. Cellular Respiration (in all living organism).
   – Breaks down glucose to produce ATP.
   – Key stages –
     - Glycolysis : splits glucose into pyruvate
     - Krebs cycle : produces electron carriers ($NADH, FADH_2$) and CO_2.
     - Electron transport chain – uses electrons to generate a proton gradient.
3. Fermentation :
   – occurs in the absence of oxygen
   – produces less ATP compared to aerobic respiration.
   – Examples – lactic acid fermentation (in muscles) and alcoholic fermentation (in yeast).
4. Metabolic pathways :
   - Anabolic : energy - consuming pathways that build complex molecules (eg. protein synthesis).
   - Catabolic :- Energy - releasing pathways that break down molecules (eg. lipid oxidation).

Key Molecules and Enzymes

1. Electron carriers – NAD+, FAD and NADP+ transfer electrons in metabolic pathways.
2. Enzymes – Biological catalyst that lower activation energy, speeding up reactions (eg. ATP synthase).
3. Proton gradient – ATP synthesis in the mitochondria and chloroplast.

Bioenergetics in Health and Disease

- Health : efficient bioenergetics is critical for cellular function, growth and repair.
- Disease : Mitochondrial dysfunction can lead to conditions like metabolic disorders, neurodegeneration and aging.

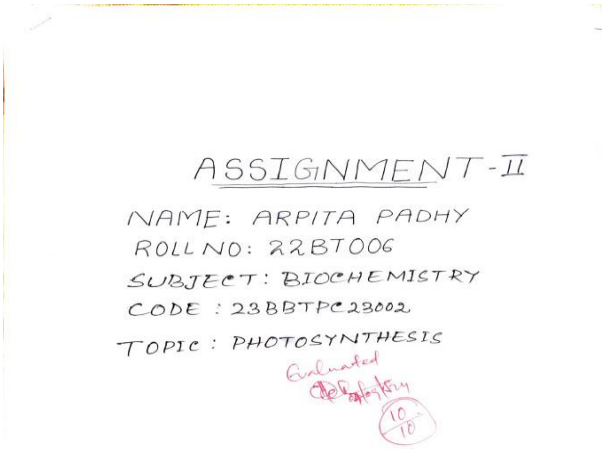
Applications of Bioenergetics

1. Biotechnology – Harnessing metabolic processes for biofuel production.
2. Medicine – Understanding metabolic disease and developing energy - target therapies.
3. Sports Science – optimizing energy utilization for athletic performance.

Mention the Concept of Thermodynamics Law and its application in Bioenergetics with three examples

8.5/10

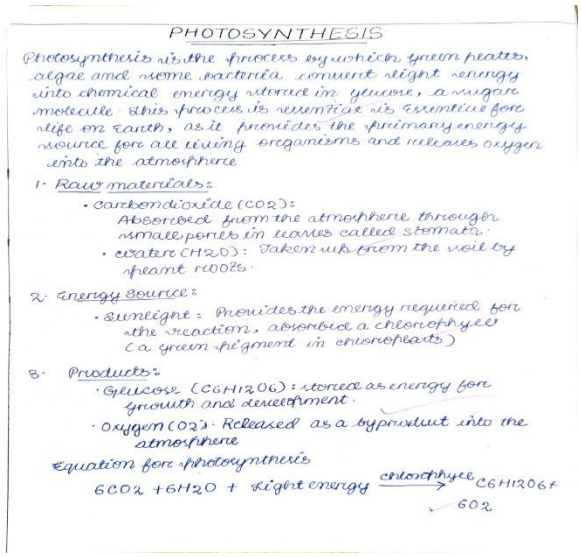
Sample Copy of Assignment-II



ASSIGNMENT-II

NAME: ARPITA PADHY
ROLL NO: 22BT006
SUBJECT: BIOCHEMISTRY
CODE : 23BBTPC23002
TOPIC : PHOTOSYNTHESIS

Evaluated
10/10



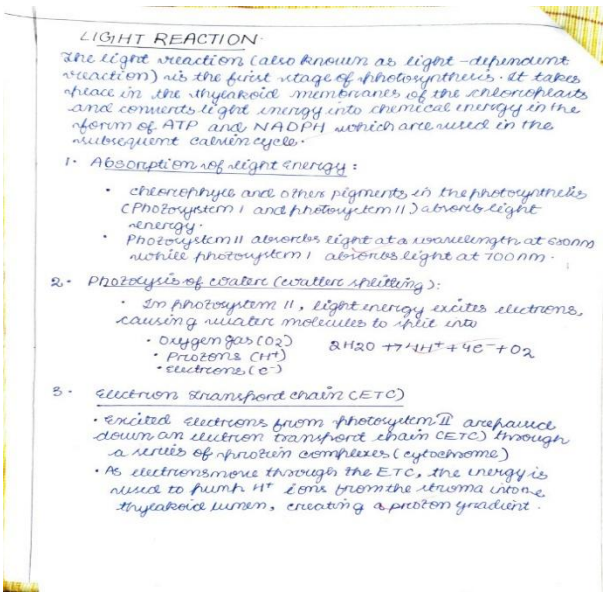
PHOTOSYNTHESIS

Photosynthesis is the process by which green plants, algae and some bacteria convert light energy into chemical energy stored in glucose, a sugar molecule. This process is essential as it provides the primary energy source for all living organisms and releases oxygen into the atmosphere.

1. Raw materials:
   - carbon dioxide (CO_2): Absorbed from the atmosphere through small pores in leaves called stomata.
   - water (H_2O): Taken up from the soil by plant roots.
2. Energy source:
   - Sunlight: Provides the energy required for the reaction, absorbed a chlorophyll (a green pigment in chloroplasts)
3. Products:
   - Glucose ($C_6H_{12}O_6$): stored as energy for growth and development.
   - Oxygen (O_2): Released as a byproduct into the atmosphere

Equation for photosynthesis

$$6CO_2 + 6H_2O + \text{light energy} \xrightarrow{\text{chlorophyll}} C_6H_{12}O_6 + 6O_2$$

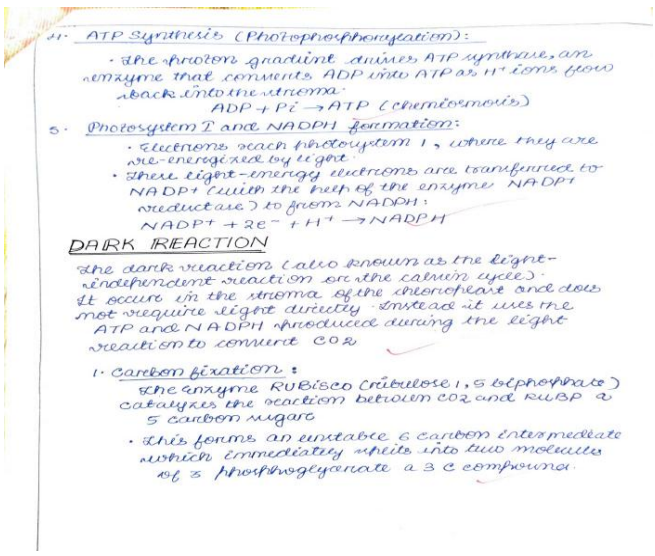


LIGHT REACTION

The light reaction (also known as light-dependent reaction) is the first stage of photosynthesis. It takes place in the thylakoid membranes of the chloroplasts and converts light energy into chemical energy in the form of ATP and NADPH which are used in the subsequent calvin cycle.

1. Absorption of light energy:
   - chlorophyll and other pigments in the photosystems (Photosystem I and photosystem II) absorb light energy.
   - Photosystem II absorbs light at a wavelength at 680nm while photosystem I absorbs light at 700nm.
2. Photolysis of water (water splitting):
   - In photosystem II, light energy excites electrons, causing water molecules to split into
     - Oxygen gas (O_2)
     - Protons (H^+)
     - Electrons (e^-)

   $$8H_2O \rightarrow 4H^+ + 4e^- + O_2$$
3. Electron transport chain (ETC)
   - Excited electrons from photosystem II are passed down an electron transport chain (ETC) through a series of protein complexes (cytochrome)
   - As electrons move through the ETC, the energy is used to pump H^+ ions from the stroma into the thylakoid lumen, creating a proton gradient.



4. ATP Synthesis (Photophosphorylation):
   - The proton gradient drives ATP synthase, an enzyme that converts ADP into ATP as H^+ ions flow back into the stroma.

   $$ADP + Pi \rightarrow ATP \text{ (chemiosmosis)}$$
5. Photosystem I and NADPH formation:
   - Electrons reach photosystem I, where they are re-energized by light.
   - These light-energy electrons are transferred to $NADP^+$ (with the help of the enzyme NADP+ reductase) to form NADPH:

   $$NADP^+ + 2e^- + H^+ \rightarrow NADPH$$

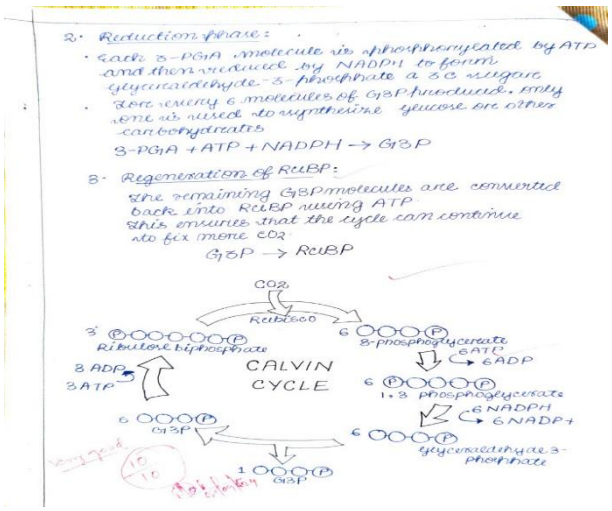
DARK REACTION

The dark reaction (also known as the light-independent reaction or the calvin cycle) occurs in the stroma of the chloroplast and does not require light directly. Instead it uses the ATP and NADPH produced during the light reaction to convert CO_2

1. Carbon fixation:
   The enzyme RUBISCO (rubulose 1,5 bisphosphate) catalyzes the reaction between CO_2 and RUBP a 5 carbon sugar
   - This forms an unstable 6 carbon intermediate which immediately splits into two molecules of 3 phosphoglycerate a 3 C compound.

Process of setting Class Test/Unit Test questions:

Class tests are essential for continuous assessment tool to evaluate students' understanding of subject concepts through quick, tricky, problem-solving, or theoretical questions.



These tests play a crucial role in assessing critical thinking, application skills, and conceptual clarity, ensuring that students engage consistently with their studies.

Each class test consists of 10 questions, each carrying 2 marks, making a total of 20 marks. The questions are based on conceptual, analytical, and theoretical types, aligned with Bloom's Taxonomy to assess different levels of learning, such as Remember, Understand, Apply, and Analyze.

The evaluation process follows a structured model answer key, ensuring fairness and consistency in marking. After assessment, students are given the opportunity to verify their answer scripts, promoting transparency and self-evaluation.

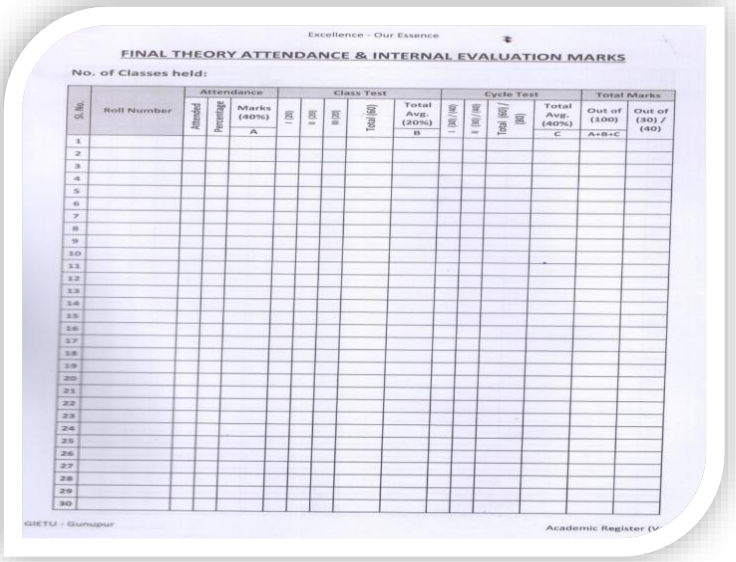
Fig. 3.1.5: Sample copy of Class Test Question Paper

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY
UNIVERSITY, GUNUPUR, ODISHA
B. Tech – III[rd] Semester: CLASS TEST - I
Subject Code: 23BBTPC23002 Subject: Biochemistry
(Branch: Biotechnology)

Time: 45 minutes **Maximum : 20 Marks**

Answer *ALL* questions (2 x 10 = 20 Marks)		**Marks**	**Blooms Level**
a.	How many stereoisomers are possible for glucose and fructose?	CO1	L2
b.	Define epimer? Write one examples?	CO1	L1
c.	Write down the names of Sulfur containing amino acids?	CO1	L1
d.	Write the name of sterols found in plants?	CO1	L1
e.	Define waxes? Write the composition of bees waxes.	CO2	L1
f.	What is anomer? Give the anomers of glucose?	CO1	L2
g.	Illustrate the composition of Sphingolipids?	CO2	L2
h.	Write any four biological importances of Fatty acids?	CO2	L3
i.	Write down any two biologically active peptides with their functions?	CO2	L2
j.	Give the sketch of Maltose showing the glycosidic bond?	CO2	L3

Fig. 3.1.6: Sample copy of Continuous Internal Evaluation


Excellence - Our Essence

FINAL THEORY ATTENDANCE & INTERNAL EVALUATION MARKS

No. of Classes held:

Sl. No.	Roll Number	Attendance			Class Test					Cycle Test					Total Marks	
		Attended	Percentage	Marks (40%) A	I (30)	II (30)	III (20)	Total (50)	Total Avg. (20%) B	I (80) / (40)	II (80) / (40)	Total (80) / (80)	Total Avg. (40%) C	Out of (100) A+B+C	Out of (30) / (40)
1															
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3															
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GIETU - Gunupur

Academic Register (V

Table No.3.1.3: Assessment of Class Test

Criteria	Description
Question Quality	Balanced mix of problem-solving, tricky conceptual, and theory-based questions
Bloom's Taxonomy Mapping	Covers Remember, Understand, Apply, and Analyze Blooms level
CO-PO Alignment	Questions are mapped to Course Outcomes (COs) and Program Outcomes (POs)
Syllabus Coverage	Ensures proportional distribution across topics
Evaluation & Answer Key	Faculty assess using a predefined model answer key
Transparency & Feedback	Answer scripts are shared with students for verification

Process of setting Cycle Test question papers:

As per the academic calendar, the Cycle Test schedule is circulated. The Central Exam Cell circulates the Cycle Test notice among faculty members and students.

- The internal question paper is set by Coordinator of the concern subject. The Controller of Examinations mandates that all faculty members follow Bloom's Taxonomy while preparing question papers.
- Faculty members must strictly adhere to the lesson plan when preparing the Cycle Test paper.
- While arriving at assessment tools and for setting question papers, faculty members keep in mind the expected course outcomes for each course and adequate weightage is given to its alignment with Program Outcomes

Assessment of the quality of the Class tests/Cycle tests/Assignment:

- The examination system is designed to ensure fair evaluation, transparency, and continuous improvement in student learning. Each subject's question paper follows a structured format, aligning with Bloom's Taxonomy for assessing different cognitive levels.
- Each subject's question paper consists of Short Answer Questions (10 *m*arks *t*otal), *i.e* 5 compulsory questions, each carrying 2 marks. 5 compulsory short questions (10 marks total). Long questions (20 marks total), with choices provided.
- Each long question carries 10 marks. Every question is *assigned as per* Bloom's Taxonomy.
- A Model Key Answer is prepared for every test. Faculty evaluate answer scripts strictly based on the model answer key to maintain consistency.
- Marks are awarded as per rubrics aligned with CO-PO mapping. Students verify their scripts and sign them as proof of verification.
- Remedial Actions for Failed Students: Students who fail are notified for remedial classes. They are provided with extra academic support before appearing for re-midsem tests.
- ERP Module for Mark Reporting: All marks are uploaded in the ERP system. Parents are informed through the ERP portal about their child's performance.

Fig. 3.1.7: Internal Evaluation Process Flow:

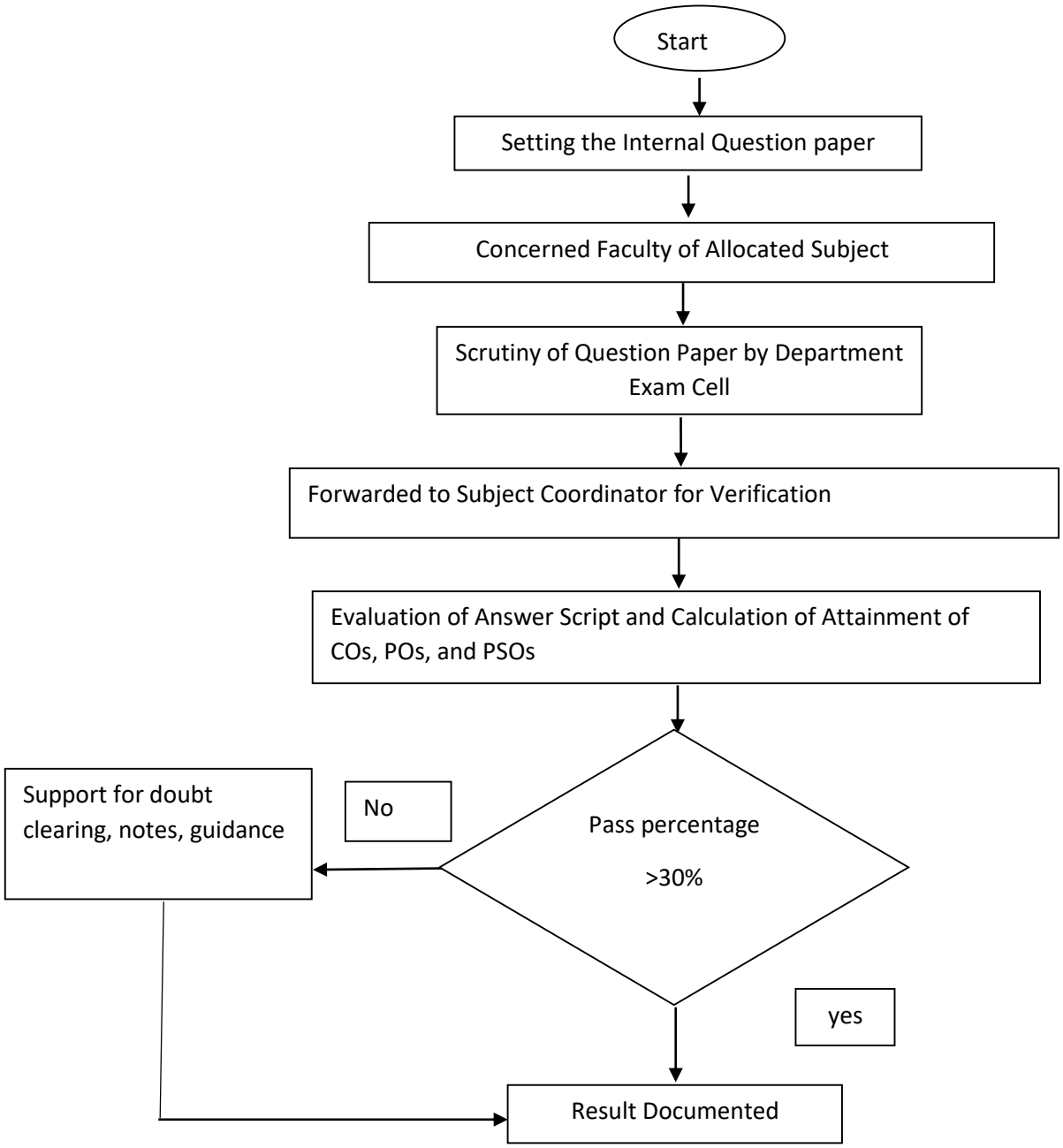
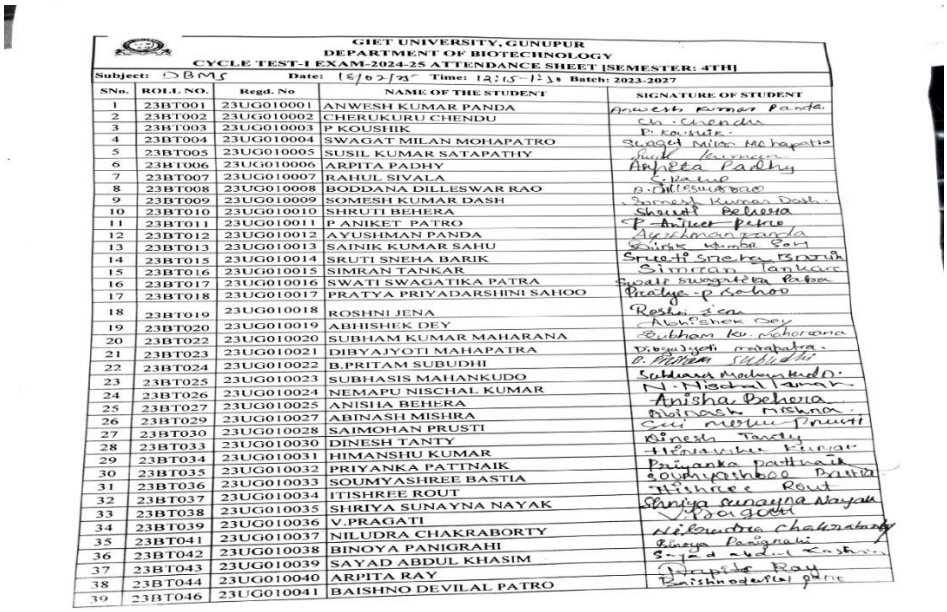


Fig. 3.1.8: Sample of Attendance of the Cycle Test



GIET UNIVERSITY, GUNUPUR
DEPARTMENT OF BIOTECHNOLOGY
CYCLE TEST-I EXAM-2024-25 ATTENDANCE SHEET [SEMESTER: 4TH]

Subject: BMS Date: 18/02/25 Time: 12:15-1:30 Batch: 2023-2027

SNo.	ROLL NO.	Regd. No	NAME OF THE STUDENT	SIGNATURE OF STUDENT
1	23BT001	23UG010001	ANWESH KUMAR PANDA	Anwesh Kumar Panda
2	23BT002	23UG010002	CHERUKURU CHENDU	Ch. Chendu
3	23BT003	23UG010003	P KOUSHIK	P. Koushik
4	23BT004	23UG010004	SWAGAT MILAN MOHAPATRO	Swagat Milan Mohapatro
5	23BT005	23UG010005	SUSIL KUMAR SATAPATHY	Susil Kumar
6	23BT006	23UG010006	ARPITA PADHY	Arpita Padhy
7	23BT007	23UG010007	RAHUL SIVALA	S. Rahul
8	23BT008	23UG010008	BODDANA DILLESWAR RAO	B. Dilleswar Rao
9	23BT009	23UG010009	SOMESH KUMAR DASH	Somesh Kumar Dash
10	23BT010	23UG010010	SHRUTI BEHERA	Shruti Behera
11	23BT011	23UG010011	P ANIKET PATRO	P. Aniket Patro
12	23BT012	23UG010012	AYUSHMAN PANDA	Ayushman Panda
13	23BT013	23UG010013	SAINIK KUMAR SAHU	Sainik Kumar Sahu
14	23BT015	23UG010014	SRUTI SNEHA BARIK	Sruti Sneha Barik
15	23BT016	23UG010015	SIMRAN TANKAR	Simran Tankar
16	23BT017	23UG010016	SWATI SWAGATIKA PATRA	Swati Swagatika Patra
17	23BT018	23UG010017	PRATYA PRIYADARSHINI SAHOO	Pratya P Sahoo
18	23BT019	23UG010018	ROSHNI JENA	Roshni Jena
19	23BT020	23UG010019	ABHISHEK DEY	Abhishek Dey
20	23BT022	23UG010020	SUBHAM KUMAR MAHARANA	Subham Ku. Maharana
21	23BT023	23UG010021	DIBYAJYOTI MAHAPATRA	Dibyajyoti Mahapatra
22	23BT024	23UG010022	B.PRITAM SUBUDHI	B. Pritam Subudhi
23	23BT025	23UG010023	SUBHASIS MAHANKUDO	Subhasis Mahankudo
24	23BT026	23UG010024	NEMAPU NISCHAL KUMAR	N. Nischal Kumar
25	23BT027	23UG010025	ANISHA BEHERA	Anisha Behera
26	23BT029	23UG010027	ABINASH MISHRA	Abinash Mishra
27	23BT030	23UG010028	SAIMOHAN PRUSTI	Saimohan Prusti
28	23BT033	23UG010030	DINESH TANTY	Dinesh Tanty
29	23BT034	23UG010031	HIMANSHU KUMAR	Himanshu Kumar
30	23BT035	23UG010032	PRIYANKA PATTNAIK	Priyanka Pattnaik
31	23BT036	23UG010033	SOUMYASHREE BASTIA	Soumyashree Bastia
32	23BT037	23UG010034	ITISHREE ROUT	Itishree Rout
33	23BT038	23UG010035	SHRIYA SUNAYNA NAYAK	Shriya Sunayna Nayak
34	23BT039	23UG010036	V.PRAGATI	V. Pragati
35	23BT041	23UG010037	NILUDRA CHAKRABORTY	Niludra Chakraborty
36	23BT042	23UG010038	BINOYA PANIGRAHI	Binoya Panigrahi
37	23BT043	23UG010039	SAYAD ABDUL KHASIM	S. Abdul Khasim
38	23BT044	23UG010040	ARPITA RAY	Arpita Ray
39	23BT046	23UG010041	BAISHNO DEVILAL PATRO	Baishnodevilal Patro

Fig. 3.1.9: Sample of Cycle Test marks of the subjects

GIET UNIVERSITY, GUNUPUR
SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY
Program: B.Tech
Branch : Biotechnology
Semester: 3rd
CYCLE TEST-1 RESULTS

Rollno	Registration No	Name	BC	FM HM	BB	ICSC T	MB	OO P	Mark Obtained	Total_ Mark	Average
23BT001	23UG010001	ANWESH KUMAR PANDA	24	23	24	28	29	12	140	180	77.78
23BT002	23UG010002	CHERUKURU CHENDU	21	25	24	27	25	14	136	180	75.56
23BT003	23UG010003	P KOUSHIK	16	30	26	29	24	20	145	180	80.56
23BT004	23UG010004	SWAGAT MILAN MOHAPATRO	8	18	18	28	23	12	107	180	59.44
23BT005	23UG010005	SUSIL KUMAR SATAPATHY	6	18	15	25	24	8	96	180	53.33
23BT006	23UG010006	ARPITA PADHY	24	25	24	29	29	23	154	180	85.56
23BT007	23UG010007	RAHUL SIVALA	8	15	5	26	13	8	75	180	41.67
23BT008	23UG010008	BODDANA DILLESWAR RAO	12	12	A	28	19	13	84	180	46.67
23BT009	23UG010009	SOMESH KUMAR DASH	9	12	15	29	14	13	92	180	51.11
23BT010	23UG010010	SHRUTI BEHERA	7	17	19	27	20	5	95	180	52.78
23BT011	23UG010011	P ANIKET PATRO	26	29	16	29	29	28	157	180	87.22
23BT012	23UG010012	AYUSHMAN PANDA	9	18	18	18	18	14	95	180	52.78
23BT013	23UG010013	SAINIK KUMAR SAHU	6	12	11	18	21	12	80	180	44.44
23BT015	23UG010014	SRUTI SNEHA BARIK	3	12	13	24	21	2	75	180	41.67
23BT016	23UG010015	SIMRAN TANKAR	9	26	25	28	24	10	122	180	67.78
23BT017	23UG010016	SWATI SWAGATIKA PATRA	24	20	22	29	23	12	130	180	72.22
23BT018	23UG010017	PRATYA PRIYADARSHINI SAHOO	14	19	20	29	24	17	123	180	68.33
23BT019	23UG010018	ROSHNI JENA	7	16	13	28	24	12	100	180	55.56
23BT020	23UG010019	ABHISHEK DEY	5	15	11	29	12	12	84	180	46.67
23BT022	23UG010020	SUBHAM KUMAR MAHARANA	1	5	4	18	4	7	39	180	21.67
23BT023	23UG010021	DIBYAJYOTI MAHAPATRA	9	0	17	19	13	12	70	180	38.89
23BT024	23UG010022	B.PRITAM SUBUDHI	7	9	12	24	14	4	70	180	38.89
23BT025	23UG010023	SUBHASIS MAHANKUDO	5	13	7	26	13	4	68	180	37.78
23BT026	23UG010024	NEMAPU NISCHAL KUMAR	7	20	10	17	18	6	78	180	43.33
23BT027	23UG010025	ANISHA BEHERA	20	30	23	29	29	17	148	180	82.22
23BT029	23UG010027	ABINASH MISHRA	7	17	12	23	15	8	82	180	45.56

3.2. Evaluation of the Semester End Exam (SEE) Question Paper (10)

(Describe the process of setting of SEE papers & their evaluation to maintain quality of assessment, constructive alignment of questions with COs and POs/PSOs. Details to be kept in course files for evaluation.)

One University Question Paper Committee is formed. The members of the committee include the COE, HOD, senior faculty, course coordinator, subject expert of BOS, subject faculty and exam in charges. The committee gives approval for the questions prepared for Semester End Exam. The following format is used.

- The central exam cell is responsible for managing the process of setting the semester-end examination question papers.

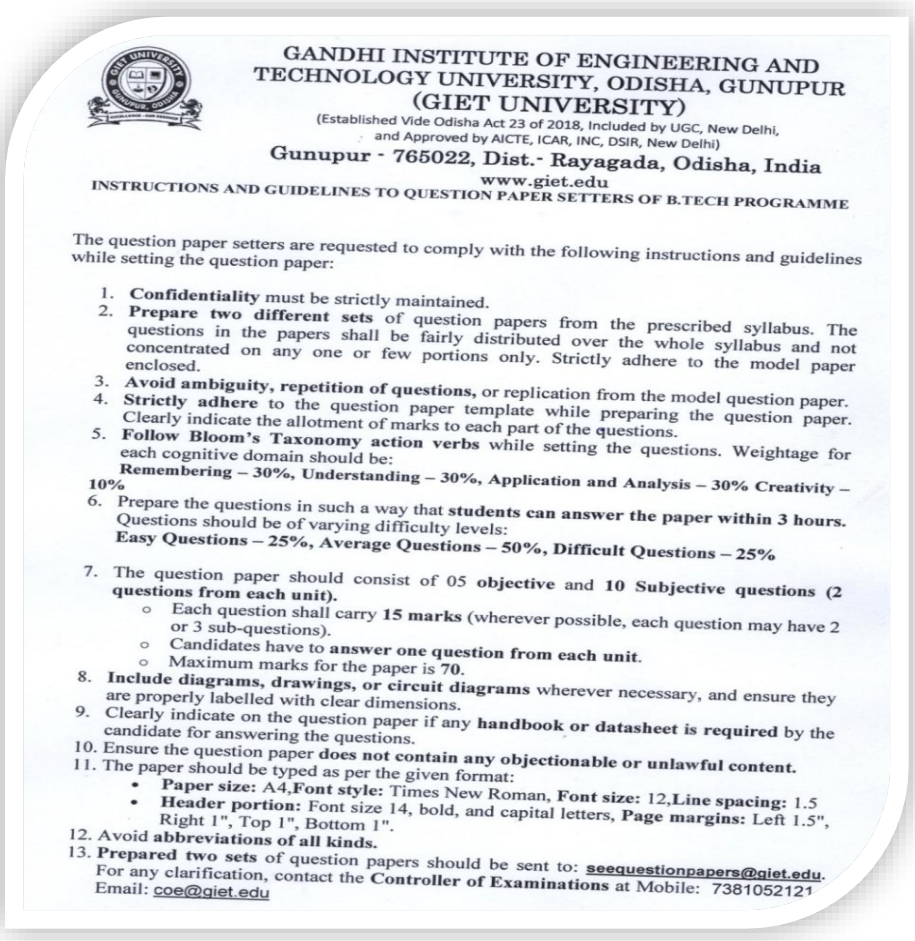
- The Controller of Examinations sends the syllabus to three external experts and requests two sets of question papers from the concerned subject faculty members. After receiving the sets, the final question paper is selected by the central exam cell based on several factors, including the weightage and coverage of the syllabus, proper alignment with Program Outcomes (PO), and the appropriateness and relevance of the questions.
- The final selection ensures that the questions reflect the course objectives and test a wide range of student knowledge and skills.
- The question paper is printed three hours before the exam after a thorough review by a moderator. The moderator checks for any discrepancies or misalignment with the syllabus.
- If the question paper is verified as correct, it is then approved for printing and distribution. The semester-end examination follows a structured format to ensure consistency and comprehensive evaluation.
- The question paper consists of two main parts. Part A contains five short-answer questions, each carrying 2 marks, designed to test fundamental understanding and recall of key concepts.
- Part B consists of five long-answer questions, each carrying 10 marks. Each long-answer question is divided into four sub-questions to assess different dimensions of the topic, such as analysis, application, and critical thinking.
- The inclusion of both short-answer and long-answer questions ensures that students are tested on both theoretical knowledge and the ability to apply concepts in problem-solving. The total duration of the exam is set to 3 hours to allow adequate time for students to carefully attempt all questions.
- Marks are allocated based on the importance of the topics and the complexity of the questions, ensuring a balanced distribution across different question types and topics.
- To maintain quality and fairness, a blueprint is created to define the structure of the question paper and the distribution of marks. The blueprint ensures that the questions are balanced in terms of difficulty and content coverage, avoiding overrepresentation or underrepresentation of any topic.
- The difficulty level of questions is balanced, incorporating basic knowledge-based questions as well as higher-order thinking questions that require analysis, evaluation, and application.

- Marks are assigned based on the complexity and length of the questions, ensuring consistency across sections and topics. Once the question paper is prepared, it undergoes a rigorous review and quality check process.
- Faculty members or colleagues are invited to review the question paper for clarity, fairness, and completeness. This step ensures that no important topic is left out and that the questions are logically framed and easy to understand.
- Additionally, the paper is checked for bias and errors in wording or structure to avoid any unintended confusion among students.
- The overall difficulty level is also assessed to ensure that the exam is appropriately challenging—neither too easy nor too difficult—providing a fair assessment of student performance.
- The evaluation of answer scripts follows a structured and transparent process. The answer scripts are scanned and distributed to the respective faculty members for evaluation.
- Faculty members are required to submit a model answer key along with the question paper to ensure consistent and fair marking. The model key defines the expected answers and the mark distribution for each question.
- The evaluation is expected to align with the specified Program Outcomes (PO) to measure the effectiveness of the teaching and learning process.
- Faculty members are given a specific deadline to complete the evaluation and submit the evaluated scripts to the central exam cell.
- This structured approach ensures that the examination process is fair, transparent, and aligned with the educational objectives of the institution.

Table No.3.2.1: Comparison of Semester End Examination Evaluation under R-19 and R-23

Regulation-19 (R-19)				Regulation-23 (R-23)			
Evaluation type	Evaluation Tool	Max. Marks	Weightage	Evaluation type	Evaluation Tool	Max. Marks	Weightage
Semester End Examination	End Sem Exam	100	**70%**	Semester End Examination	End Sem Exam	100	**60%**

Fig. 3.2.1: Instructions and guidelines for Semester End Examination Question Paper setting



GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)
(Established Vide Odisha Act 23 of 2018, Included by UGC, New Delhi, and Approved by AICTE, ICAR, INC, DSIR, New Delhi)
Gunupur - 765022, Dist.- Rayagada, Odisha, India
www.giet.edu

INSTRUCTIONS AND GUIDELINES TO QUESTION PAPER SETTERS OF B.TECH PROGRAMME

The question paper setters are requested to comply with the following instructions and guidelines while setting the question paper:

1. **Confidentiality** must be strictly maintained.
2. **Prepare two different sets** of question papers from the prescribed syllabus. The questions in the papers shall be fairly distributed over the whole syllabus and not concentrated on any one or few portions only. Strictly adhere to the model paper enclosed.
3. **Avoid ambiguity, repetition of questions,** or replication from the model question paper.
4. **Strictly adhere** to the question paper template while preparing the question paper. Clearly indicate the allotment of marks to each part of the questions.
5. **Follow Bloom's Taxonomy action verbs** while setting the questions. Weightage for each cognitive domain should be:
   Remembering – 30%, Understanding – 30%, Application and Analysis – 30% Creativity – 10%
6. Prepare the questions in such a way that **students can answer the paper within 3 hours.** Questions should be of varying difficulty levels:
   Easy Questions – 25%, Average Questions – 50%, Difficult Questions – 25%
7. The question paper should consist of 05 **objective** and **10 Subjective questions (2 questions from each unit).**
   - Each question shall carry **15 marks** (wherever possible, each question may have 2 or 3 sub-questions).
   - Candidates have to **answer one question from each unit.**
   - Maximum marks for the paper is **70.**
8. **Include diagrams, drawings, or circuit diagrams** wherever necessary, and ensure they are properly labelled with clear dimensions.
9. Clearly indicate on the question paper if any **handbook or datasheet is required** by the candidate for answering the questions.
10. Ensure the question paper **does not contain any objectionable or unlawful content.**
11. The paper should be typed as per the given format:
    - **Paper size:** A4,**Font style:** Times New Roman, **Font size:** 12,**Line spacing:** 1.5
    - **Header portion:** Font size 14, bold, and capital letters, **Page margins:** Left 1.5", Right 1", Top 1", Bottom 1".
12. Avoid **abbreviations of all kinds.**
13. **Prepared two sets** of question papers should be sent to: seequestionpapers@giet.edu. For any clarification, contact the **Controller of Examinations** at Mobile: 7381052121 Email: coe@giet.edu

Fig. 3.2.2: Sample Copy of End Semester Question Paper

QP Code: RM21BTECH429 Reg. No | | | | | | | | | | | AY 21

GIET UNIVERSITY, GUNUPUR – 765022

B. Tech (Sixth Semester Regular) Examinations, May – 2024

21BBTPC36001 - Plant Biotechnology

(Biotechnology)

Time: 3 hrs Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART – A **(2 x 5 = 10 Marks)**

	Q.1. Answer ***ALL*** questions	CO #	Blooms Level
a.	What is dedifferentiation of plant cell?	CO1	K1
b.	Define disarmed Ti plasmid.	CO2	K2
c.	Write a short note on *lux* A and its uses.	CO3	K2
d.	Explain about cybrids.	CO3	K3
e.	What is elicitors?	CO4	K4

PART – B **(15 x 4 = 60 Marks)**

	Answer ***ALL*** questions	Marks	CO #	Blooms Level
2. a.	Give an account of *in vitro* development of callus culture.	7	CO1	K1
b.	What are different types of organogenesis practices in tissue culture?	8	CO1	K2
	(OR)			
c.	Write on types and roles of plant growth regulators in tissue culture?	7	CO1	K3
d.	Describe the establishment and importance of single cell culture.	8	CO1	K3
3.a.	How protoplast is isolated? Write on different protoplast culture methods.	7	CO2	K4
b.	Write on different protoplast fusion techniques.	8	CO2	K1
	(OR)			
c.	Explain on steps of microspore culture.	7	CO2	K3
d.	Give an account of electroporation and microinjection techniques.	8	CO2	K4
4.a.	How disease resistance crop plants are developed?	7	CO3	K3
b.	Write on uses of reporter genes during gene transfer to plants.	8	CO3	K4
	(OR)			
c.	What is golden rice and how is it produced?	7	CO3	K4
d.	Explain on production artificial seed.	8	CO3	K2
5.a.	Discuss biotransformation with examples.	7	CO4	K3
b.	Write on types of secondary setabolites found in plants.	8	CO4	K31
	(OR)			
c.	Describe the production of secondary metabolites through tissue culture.	7	CO4	K2
d.	Give an account of specialized strategies for production of secondary metabolites.	8	CO4	K4

--- End of Paper ---

Fig. 3.2.3: Sample copy of Semester End Exam marks for Analysis

GIET UNIVERSITY
Gunupur-765022, Odisha
www.giet.edu

EXTERNAL MARKS REPORT

CourseName : B.TECH
Semester : IV SEMESTER
ExamCode : 22BBTPC24001
Subject Name : Molecular Biology
MonthYear : MAY 2024
BundleNo : R22MB13843

Valuator Code : 196
Valuator Name : Dr. Diptikanta Acharya
Valuator Designation : Assistant Professor
Valuator Dept Name : BIOTECH
Valuator College Name : GANDHI

Sl. NO	SCRIPT CODE	1(a)	1(b)	1(c)	1(d)	1(e)	2(a)	2(b)	2(c)	2(d)	3(a)	3(b)	3(c)	3(d)	4(a)	4(b)	4(c)	4(d)	5(a)	5(b)	5(c)	5(d)					Total Marks
1	299727	2	2	2	2	2	7	4					5	6.5	9	3.5			8	4							57.00
2	299728	1	1	1	1	2			6	5	4	4	4	5			7	3	4	1							41.00
3	299729	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0					3.00
4	299730	2	1.5	2	1	1	6	6			9	4			9	5			9	3.5							59.00
5	299731						0	0					0	0			0	0			0	0					0.00
6	299732	2	2	1.5	2	2	6.5	4.5					7	5.5	8.5	4			7.5	4							57.00
7	299733	2		2	2	2			7	6	6	3.5			8.5	3.5			7	1.5							51.00
8	299734	0	0	0	0	0			1	1			1					1	1	0							5.00
9	299735		0			1	5		5	4			4	4	3		6		3	2							29.00
10	299736	1.5		1	1	0	4	2.5					4				6	2	4.5	2.5							29.00
11	299737	2	1	1	1	1	6	4.5					6	6			5.5	2	2	2							40.00
12	299739	2	0		0	1	7	4			6	3.5					6	0			2.5	1					33.00
13	299740	2	0	2	1	2			7	6	6	4		4			6	3	4		2						43.00
14	299741	2	2	2	2	2	5	6					7	6	7	4			8.5	4.5							58.00
15	299742	2	0		1	1	4	2			5	4			6	4	3										29.00
16	299743	1	0.5	0	1.5	0.5	6	6	4	4			4	3	6	3		3	4.5								36.00
17	299744	2	1.5	1.5	2	1			7	6			6		7.5	4			8	4.5							51.00
18	299745	0	0			0			5.5	4			5	2.5			5	3			4						29.00
19	299746	1	0	0	1	0	5.5	0			7.5	4					5.5	3.5			0	1					29.00
20	299747	2				1	5				3	3	5.5	5.5		3	6	3									28.00
21	299748	2	2	2	2	2			7	6			7	6	9	4.5			9	4.5							63.00

3.3. Evaluation of Laboratory Work and Workshop (Continuous and SEE) (10)

(Provide details of rubrics used to assess learnings in laboratories and workshops linking with COs and POs/PSOs targeted. Evidence of student assessments through rubrics to be kept in course files for evaluation.)

The University organizes/encourages inter collegiate contests to encourage students to assess their Practical Knowledge of latest technologies.

The students are divided into groups of 3 number each and asked to perform the experiment. Each group should do the experiment separately and generate their result. If result has not come out of the experiment, then they asked to repeat the same experiment again.

Some experiments are having demo classes only. In those experiments a complete labelled diagram of the experiment or instrument are shown to the students and the detailed working principle is explained at the lab class.

Besides that, students are performing additional experiments related to industry for better understanding of the subject. Viva voce is conducted at the end of each laboratory session to identify degree of understanding of the students with respect to that experiment.

Each lab class is evaluated by the concerned faculties on the same day of experiment for 10 marks. The evaluation is done for a student based on his performance during the entire semester such as marks obtained in all lab classes, marks secured in viva voce and marks for record submission.

Assessment Methods

- **Rubric-Based Evaluation** (quantitative & qualitative)
- **Lab Viva Voce** to test theoretical understanding
- **Continuous Lab Performance Evaluation**
- **Final Lab Exam (Practical Demonstration)**

Table No.3.3.1: Comparison of Laboratory Exam Evaluation under R-19 and R-23

Regulation-19 (R-19)				Regulation-23 (R-23)			
Component of Evaluation	Term	Marks	Weightage	Component of Evaluation	Term	Marks	Weightage
Internal Lab Test	Continuous Internal Evaluation (CIE)	30	**50%**	Internal Lab Test	Continuous Internal Evaluation (CIE)	10	**50%**
Internal Viva		10		Internal Viva		5	
Lab Report		10		Lab Report		5	
Lab Experiment		30	**50%**	Lab Experiment		20	**50%**

Lab Viva By Expert	Semester End Examination (SEE)	20		Lab Viva By Expert	Semester End Examination (SEE)	10	
Total		**100**	**100%**	**Total**		**50**	**100%**

Table No.3.3.2a: Rubrics for Laboratory Exam Evaluation

Marks obtained> cut-off	Scoring System	Rating in 3 scale (I)
>=70%	Outstanding Performance	3
60%-69%	Good Performance	2
50% - 59%	Satisfactory Performance	1
<50%	Needs Improvement	-

Table No.3.3.2b: Rubrics for Laboratory Evaluation (Chemical Engineering)

Criteria	Excellent (10-9)	Good (8-7)	Satisfactory (6-5)	Needs Improvement (<5)	Weightage (%)
Understanding of Concepts	Demonstrates thorough understanding of principles, equations, and industrial relevance	Good understanding with minor conceptual gaps	Basic understanding; struggles with advanced concepts	Limited understanding; major conceptual errors	**15%**
Experimental Execution	Follows SOPs precisely, operates equipment safely and efficiently	Minor deviations in procedure; maintains safety	Occasional errors in handling equipment and measurements	Significant errors in execution and safety violations	**25%**
Data Accuracy & Interpretation	Data is accurate; correctly applies chemical engineering calculations	Minor errors in data or calculations	Frequent errors in interpretation and calculations	Major calculation mistakes; incorrect or incomplete data	**20%**
Report Writing & Documentation	Well-structured report with clear objectives, results, and conclusions; proper citations and diagrams	Report is well-written with minor formatting or content issues	Report lacks clarity, incomplete sections, or minor errors	Poorly structured report; missing key sections or incorrect information	**20%**
Teamwork & Communication	Effectively collaborates, shares	Works well in a team; communicate	Limited collaboration; basic	Poor teamwork and unclear communication	**10%**

	responsibilities, and explains results clearly	s findings with minor gaps	communication skills		
Problem-Solving & Innovation	Identifies experimental issues, suggests process improvements, and relates to industry	Attempts to troubleshoot minor issues and offers reasonable suggestions	Basic problem-solving approach; limited innovation	No attempt at problem-solving or improving process	**10%**

Table No.3.3.3: Sample Questions for Different Biotechnology Labs

A. Biochemistry Lab	B. Microbiology Lab
1. **Explain the working principle of a UV Visible Spectrophotometry**. 2. **What is the significance of the estimation of DNA/RNA/Protein**? 3. **How to determine the Tm value of DNA?** 4. **How to prepare the Orcinol reagents?**	**1. What is pure culture?** **2. Differentiate between Dry sterilization and wet sterilization?** **3. Explain the steps of Gram's staining.** **4. Explain the process of serial dilution?**
C. Molecular Biology Lab	D. Genetic Engineering Lab
1. What are the components of lysis buffer for DNA isolation? **2. What is the function of homogenization buffer?** **3. How to prepare the agarose gel.** **4. What is the function of Ethidium bromide in electrophoresis of DNA?**	**1. What is the objective to isolate the plasmid DNA?** **2. How can you separate plasmid DNA from Genomic DNA?** **3. Explain the step of restriction-digestion?** 4. **What do you mean by competent cell?**

Table No.3.3.3: CO-PO-PSO Matrix for a lab course based on the assessment rubric

COs	**PO1**	**PO 2**	**PO3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO 8**	**PO 9**	**PO1 0**	**PO1 1**	**PSO 1**	**PS O2**	**PS O3**
CO1 – Understan	3	1	–	–	–	–	–	2	3	–	–	3	–	2

ding of lab discipline and regularity													
CO2 – Ability to document experimental work effectively	–	2	2	1	–	–	–	–	–	3	–	–	3	
CO3 – Ability to analyze and explain theoretical concepts	–	3	3	2	–	–	–	–	–	3	–	–	–	3
CO4 – Application of theoretical knowledge in practical scenarios	3	3	3	3	2	–	–	–	–	–	–	–	–	2

3.4. Evaluation of Industrial Training/ Internship (Continuous and SEE) (10)

(Provide details of rubrics used to assess learnings in internships/industrial trainings linking POs/PSOs targeted for attainment. Evidence of student assessments through rubrics to be kept in course files for evaluation.)

Table No.3.4.1: Assessment of Internship Rubrics with PO Mapping

S. No.	Assessment Criteria	Max. Marks	Mapped POs	Biotechnology Relevance
1	Technical Knowledge Gained	20	PO1, PO2	Application of Techniques related to Biotechnology
2	Application of Engineering Tools	10	PO5	Use of DNA extraction, PCR, RDT, Immunotechniques and Microbial Identification
3	Problem Solving/Analysis	15	PO2, PO4	Diagnosing issues in fermentation and DSP
4	Communication Skills	10	PO8, PO10	Scientific Writing, Writing clear and concise research papers**,** lab reports and project documentation
5	Professional Behaviour	10	PO8, PO9	Adherence to plant discipline, timelines, and industrial culture
6	Teamwork and Collaboration	10	PO9	Working with operations, maintenance, safety teams
7	Safety and Ethics Awareness	10	PO6, PO8	Laboratory Safety Practices, Biosafety and Biosecurity and Ethical Considerations in Biotechnology
8	Overall Learning Reflection	15	PO12	Self-learning, initiative, connecting theory to practice
	Total	**100**		

- Training is a structured program integrated into the academic curriculum, designed to equip students with practical knowledge, industry exposure, and professional skills. It serves as a bridge between theoretical learning and real-world application, enhancing the students' readiness for professional careers.

- Students from both even and odd semesters are allowed to participate in vocational training for **two months** during **May and June**.
- The training is conducted in collaboration with either **Public Sector Companies or Certified Government Institutes.**
- The objective of training is to provide students with exposure to cutting-edge technologies and industry best practices while enhancing their technical knowledge, problem-solving skills, and professional conduct.
- Students from even and odd semesters participate in this training during May and June, gaining hands-on experience through collaborations with public sector companies and certified government institutes.
- Some students also engage in on-the-job training facilitated by the Training and Placement (T&P) Cell, with companies like SHRM Biotech, Kolkata, United Brewaries Pvt. Ltd., Khurda, Biocon Ltd. Etc. offering real-time work experience. Based on their performance, some students receive pre-placement offers (PPO).
- The training focuses on technical skill enhancement by familiarizing students with industry-standard tools and technologies, encouraging problem-solving and decision-making, and providing exposure to industrial operations and work culture.
- It also develops communication and teamwork skills, professional growth, and career advancement opportunities through hands-on experience and performance-based hiring.

Outcome-Based Impact of Training:

i. Enhanced Employability: Practical experience and performance-based hiring improve job opportunities.
ii. Skill Development: Improved technical, analytical, and professional skills.
iii. Industry Readiness: Students become familiar with industrial standards and work culture.
iv. Performance Recognition: Strong performers may secure pre-placement offers (PPO) or job offers.
v. Networking Opportunities: Professional connections with industry experts and potential employers.

Outcomes of Internship

CO 1: Project Planning and Execution

CO 2: Problem Identification and Analysis

CO 3: Design and Development of Solutions

CO 4: Use of Modern Tools and Techniques

CO 5: Professional and Ethical Conduct

Internship and PO/PSO Matrix:

Internship Component	**PO 1**	**PO 2**	**PO 3**	**PO 4**	**PO 5**	**PO 6**	**PO 7**	**PO8**	**PO 9**	**PO 10**	**PO11**	**PSO1**	**PSO 2**	**PSO 3**
CO 1	**2**	**2**								**2**	**2**	**2**	**2**	**3**
CO 2	**2**	**2**	**2**							**2**	**2**	**2**	**3**	**2**
CO 3	**2**	**2**	**2**								**2**	**2**	**2**	**2**
CO 4	**3**	**3**	**2**	**3**	**2**	**3**			**3**	**2**	**2**	**3**	**2**	**3**
CO 5						**2**	**2**	**2**	**2**	**2**	**3**	**2**	**2**	**2**

Table 3.4.1 Sample List of Students Internships

Student Name	**Duration**	**Industry/Institute**	**Description of project handled**	**Tools and techniques and method learned**	**Rubric Criteria**	**Mapped POs**
Smruti Jena	2 months	Obvez labs, Hyderabad	Production of Bioethanol	Fermentation Technology	Technical Knowledge, Tools, Safety, Teamwork	PO2, PO3, PO5, PO6, PO7, PO9, PO10

Abinash Sahoo	2 months	SMDRC, Visakhapatnam	Biophysical analysis	GC-MS, HPLC etc.	Technical Knowledge, Tools, Safety, Teamwork	PO2, PO3, PO5, PO6, PO7, PO9, PO10
Divya nandini Gumangoo	2 months	Exsure Private Limited - KIITS TBI.	Biomanufacturing	Instrumental analysis	Technical Knowledge, Problem Solving, Communication	PO2, PO5, PO6, PO7, PO8, PO10
Samikshya Mund	2 months	DBT-ILS, Bhubaneswar	Bioproduct development	Advanced Instrumental Analysis	Technical Knowledge, Tools, Safety, Teamwork	PO2, PO3, PO5, PO6, PO7, PO9, PO10

- Students who have undergone training are required to follow a structured documentation and evaluation process to ensure a comprehensive assessment of their learning and professional development.
- They must also present their project before a panel of faculty members, covering objectives, challenges, solutions, and learning outcomes. The evaluation is based on technical knowledge, problem-solving ability, professional conduct, and presentation skills, with a total of 45 marks allotted.
- The internship carries **2 credits** towards the overall CGPA and aligns with Program Outcomes (PO) and Program-Specific Outcomes (PSO), enhancing industry readiness, technical competency, and professional growth.

3.5. Evaluation of Projects (20)

(Provide details of rubrics used to assess learnings in projects linking POs/PSOs targeted for attainment. Evidence of student assessments through rubrics to be kept in course files for evaluation.)

Projects are an integral part of the curriculum, designed to help students develop technical and problem-solving skills. The project work is divided into two categories: Minor Projects and the Final Project. The evaluation process is structured to ensure that students gain practical knowledge, technical expertise, and an understanding of real-world challenges.

Minor Projects

Minor projects are conducted from the 4th semester to the 6th semester to help students build a strong foundation in project development. The focus is on developing basic projects involving both hardware and simulation to give students a clear understanding of the tools, software, and hardware devices used in the field.

Each project group can have a maximum of 4 students, and projects are assigned based on students' interests. A project guide (a faculty member) is assigned to each group to provide continuous support and guidance throughout the project development phase.

Evaluation Stages

The evaluation process is divided into two key stages:

First Evaluation:

Students present the project theme to the Departmental Project Evaluation Committee. The committee verifies the project theme, assesses its relevance and feasibility, and provides necessary suggestions for improvement.

Second Evaluation:

Students present the working model and project report to the committee. The committee evaluates the project based on technical soundness, feasibility, and presentation quality. The final project report is then submitted to the department for record purposes.

Minor Projects

- Duration: From 4th semester to 6th semester.
- Focus:
    - Develop basic projects involving hardware and simulation.

  - Gain understanding of tools, software, and hardware devices.
- Group Size:
  - Maximum 4 students per project.
- Project Assignment:
  - Assigned based on students' interests.
  - Supervised by a project guide who provides continuous support and guidance.

Evaluation Stages

(a) First Evaluation:

- Students present the project theme to the Departmental Project Evaluation Committee.
- The committee verifies the theme, assesses feasibility, and provides suggestions for improvement.

(b) Second Evaluation:

- Students present the working model and project report to the committee.
- The committee evaluates the project based on:
  - Technical soundness
  - Feasibility
  - Presentation quality
- Final project report is submitted to the department.

Final Assessment

Marks are assigned based on:

- Quality of project presentation – Clarity and depth of explanation.
- Model demonstration – Functionality and innovation of the model.
- Project report – Quality, completeness, and accuracy of the report.
- Overall project performance – Technical depth, teamwork, and creativity.

Frequency of Evaluation

- The Departmental Project Evaluation Committee meets twice every semester to monitor and assess project progress.
- Regular evaluations ensure timely identification and resolution of issues.

Evaluation Scheme

Projects are evaluated according to a structured scheme that ensures:

- Environmental sustainability – Projects should minimize environmental impact.

Safety compliance – Follow safety standards during execution.

- Ethical standards – Ensure responsible and professional conduct.
- Cost-effectiveness – Optimize costs without compromising quality.

Role of Project Guide

The Project Guide (a faculty member) provides:

- Continuous guidance from abstract to final report preparation.
- Ensures adherence to safety, environmental, and ethical standards.
- Monitors the project's technical and financial feasibility.

Publication Requirement

- Students, with the help of their project guide, are encouraged to publish their work in relevant journals.
- Publication enhances academic credibility and professional recognition.

Final Project

- Conducted in the 8th semester.
- Evaluated by an external expert from IIT, NIT, or a central/state government university.
- Evaluation includes:
    - Viva-voce examination – Testing technical knowledge and understanding.
    - Project evaluation – Based on technical soundness, innovation, and presentation quality.
- External expert's feedback plays a key role in final grading and project assessment.

Table No.3.5.1: Rubric for Project Evaluation

Sl. No.	Criteria	Excellent (3)	Good (2)	Average (1)
1.	Complexity	Addresses a complex, multidisciplinary engineering problem.	Solves a moderately challenging engineering task.	Focuses on a basic or routine task with limited challenge.

2.	Cost Awareness	Includes detailed cost analysis with optimization and justification.	Shows a general understanding of cost and feasibility.	Little or no mention of cost implications or feasibility.
3.	Environmental Relevance	Strong integration of eco-friendly design and practices with measurable impact.	Includes some considerations for environmental impact.	Lacks attention to environmental factors or green practices.
4.	Sustainability	Clearly aligned with long-term sustainable development goals (SDGs).	Mentions or applies some sustainability concepts.	No meaningful integration of sustainability aspects.

Fig. 3.5.1: Sample of Rubric for Project Evaluation

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
Gunupur-765022, Dist. Rayagada, Odisha, India
SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

EVALUATION RUBRICS FOR PROJECTS **BATCH: 2020-2024**

SL NO	ROLL NO	NAME OF THE STUDENT	CRITERIA						
			Complexity (10)	Cost Awarenes s (10)	Environmental Relevance (10)	Sustainabil ity (10)	Total Marks (40)	Average	% Secures
1	20BT001	DEEPAK SAMAL	9	9	9	8	35	8.75	87.5
2	20BT002	ARPITA SAHU	8	7	8	7	30	7.5	75
3	20BT003	CHETANSI PATEL	8	7	7	8	30	7.5	75
4	20BT004	PRIYANKA PRIYADARSHINI	8	6	8	7	29	7.25	72.5
5	20BT005	RINKI MAHARANA	7	7	7	6	27	6.75	67.5
6	20BT006	SHAIK SHARMILA BEGUM	6	7	7	7	27	6.75	67.5
7	20BT007	DOLLY KHORA	5	6	6	7	24	6.0	60
8	20BT008	GOUTAM JHA	9	9	9	8	35	8.75	87.5
9	20BT009	PRIYANKA PANIGRAHI	8	6	8	7	29	7.25	72.5
10	20BT010	MRINALINI BHANU	8	7	7	8	30	7.5	75
11	20BT012	T SOUMYASHREE	7	6	8	7	28	7.0	70

PO/PSO Matrix for Project-Based Learning

Rubric Criterion	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PSO 1	PS O2	P S

														O 3
Understanding the Relevance, Scope, and Dimension of the Project	✔	✔										✔		✔
Relation to Literature/Application			✔	✔									✔	
Methodology					✔	✔						✔	✔	
Quality of Analysis and Result				✔			✔						✔	✔
Interpretation and Conclusion								✔	✔				✔	
Report										✔	✔		✔	✔

3.6. Evidence of Addressing Sustainable Development Goals (SDG) (10)

(Provide details of student work carried out to meet sustainable development goals such as research work, project work, student activities etc. Evidence in the form of a portfolio to be made available during the visit.)

Students are encouraged to develop innovative projects aimed at societal betterment, with a particular focus on the tribal belt of Odisha and addressing key challenges in sectors such as healthcare, agriculture, farming, hygiene, waste management, and green energy.

These projects are aligned with important Sustainable Development Goals (SDGs), including Good Health and Well-Being (SDG 3), Clean Water and Sanitation (SDG 6), Affordable and Clean Energy (SDG 7), Sustainable Cities and Communities (SDG 11), and Responsible Consumption and Production (SDG 12).

Under the guidance of faculty members, students develop these projects in university labs, which are often submitted to competitions like the MSME Hackathon and considered for patent filing. This reflects a strong commitment to sustainable innovation, enhances societal impact, and strengthens problem-solving skills aligned with global sustainability goals.

Each project group typically consists of three to four students who work together to complete the project. Upon completion, the students are required to submit a project report and deliver a presentation.

Initially, a preliminary presentation is conducted to provide guidance and make students aware of the project's seriousness. Faculty members offer suggestions and advice for improvements, which the students are expected to address in consultation with their project guide. Once the project is finalized, the report must be authenticated by the guide before submission to the panel members for evaluation.

The evaluation of the project is based on key parameters such as attendance, technical knowledge, presentation, and report quality. A set of specified rules and formats is distributed among the students to ensure they follow a structured and consistent approach throughout the project. This helps maintain uniformity and ensures that students adhere to professional guidelines while completing their project work.

Fig. 3.6.1: Sample of Complex Engineering Problem Project

3.7. Attainment of Course Outcomes (25)

3.7.1. Describe the Assessment Tools and Processes Used to Gather the Data for the Evaluation of Course Outcome (05)

(Describe different assessment tools (semester end examinations, mid-semester tests, laboratory examinations, student portfolios etc.,) to measure the student learning and hence attainment of course outcomes.)

To the Course Outcomes (COs), a variety of assessment tools and processes are employed. These methods are designed to align with the intended learning objectives and to capture both direct and indirect evidence of student learning. The primary tools and processes include:

1. Direct Assessment Tools:

These tools provide measurable evidence of student learning based on their performance in academic tasks.

- **Internal Examinations:** Mid-semester and end-semester examinations are structured to include questions mapped to specific COs. The performance in each relevant question is used to calculate attainment levels.
- **Assignments, Class Test and Tutorials:** Regular class test and assignments are designed with specific COs and rubrics are used for consistent and objective evaluation.
- **Laboratory Work and Practical Exams:** For courses with lab components, practical work is assessed based on predefined criteria linked to COs, such as technical skills, accuracy, and analysis.
- **Seminars presentations and Project Work:** Regular seminar classes and Mini and major projects are assessed through rubrics that cover CO-related criteria such as problem-solving, innovation, and application of theoretical knowledge.

2. Indirect Assessment Tools:

These tools capture student perceptions and experiences, providing supplementary evidence for CO attainment.

- **Student Feedback Surveys:** Conducted at the end of each course to gauge student understanding and engagement in relation to the course outcomes.
- **Course Exit Surveys:** Gather student opinions on how well the course prepared them to meet the expected outcomes.
- **Alumni Feedback:** Offers insight into long-term relevance and applicability of COs in real-world contexts.
- **Employer Feedback:** It is an important indirect assessment tool used to evaluate the effectiveness of a program in preparing students for real-world job roles. It provides valuable intuitions into the applicability of knowledge, technical skills, soft skills, and professional behavior of graduates in the workplace.

3. Data Collection and Analysis Process:

- **Mapping Questions to COs:** Each question in exams or assignment tasks is mapped to one or more COs.
- **Rubric-Based Evaluation:** Standard rubrics ensure uniform grading across evaluators, especially for subjective assessments.
- **CO Attainment Calculation:** The percentage of students achieving a set performance threshold (e.g., 60% of maximum marks) is used to determine attainment levels.
- **Analysis and Reporting:** Collected data is compiled and analyzed to identify areas of strength and improvement, which is then used for continuous course enhancement.

3.7.2. Record the Attainment of Course Outcomes of all Courses with Respect to Set Attainment Levels (20)

(Program shall set course outcome attainment levels for each course. Measuring CO attainment through Continuous Internal Examinations (CIE) and Semester End Examination (SEE) needs to be detailed.

Target may be stated in terms of percentage of students getting more than class average marks or set by the program in each of the associated COs in the assessment instruments (midterm tests, assignments, mini projects, reports and presentations etc. as mapped with the COs.

The attainment of Course Outcomes (COs) for all courses is systematically recorded and analyzed based on predefined attainment levels. This process ensures continuous quality improvement in teaching and learning and helps to align academic delivery with desired educational outcomes.

1. Setting Attainment Levels:

Each Course Outcome is evaluated against a **three-level attainment scale**, typically defined as:

- **Level 1 (Low):** 40–49% of students meet the target performance.
- **Level 2 (Moderate):** 50–59% of students meet the target performance.
- **Level 3 (High):** 60% and above students meet the target performance.

2. Data Sources for CO Attainment:

- Internal Assessment (Mid-term, Quizzes, Assignments)
- End Semester Examination
- Laboratory Evaluations (where applicable)
- Project Work
- Indirect Assessments (e.g., student feedback)

3.8. Attainment of Program Outcomes and Program Specific Outcomes (25)

(The attainment of POs and PSOs by direct assessment based on student performance and indirect assessment based on surveys are to be presented through program level Course-PO&PSO matrices as indicated.)

In Outcome based Education, assessment done through one or more than one processes, carried out by the institution, that identify, collect, and prepare data to evaluate the achievement of programme educational objectives, program outcomes and course objectives and outcomes.

PO Assessment Tools

Assessment tools are categorized into direct and indirect methods to assess the programme educational objectives, program outcomes and course outcomes. Direct methods display the student's knowledge and skills from their performance in the continuous assessment tests, end–semester examinations, presentations, and classroom assignments etc. these methods provide a sampling of what students know and/or can do and provide strong evidence of student learning. Indirect methods such as surveys and interviews ask the stakeholders to reflect on student's learning. They assess opinions or thoughts about the graduate's knowledge or skills and their valued by different stakeholders.

Since an outcome can be achieved in more than one course, while assessing a specific outcome, numbers of courses are assessed and both core and electives course are assessed.

The Course/Programme outcomes are difficult to measure such as assessing critical thinking, creativity, analytical skills, and problem solving etc. Hence the department has adopted Criterion Referenced Rubrics to assess the POs and COs wherever appropriate. The Rubric criteria are either developed by department faculty or sometimes even with consultation with students and distributed before an assignment, project or test. Rubrics are used for both formative and summative assessment of students. Same rubric is used for assessing an outcome so that the faculty is able to assess student progress and maintain the record of the same for each student.

The rubrics are shared with students before being evaluated so that they are aware of the performance criteria and their weightage. Copies of Rubrics used for assessing POs are shown below table.

Program Outcome assessment process

For each outcome the Department Advisory Committee (DAC) along with program and course coordinators defines performance indicators (Assessment criteria) and their targets. Each performance indicator is aligned to the courses and targets set for each performance indicator. This is indicated in the table. The faculty members then keep the POs in front of them develop COs (5-7 for each course) and then break each of their unit outcome into elements of Bloom's Taxonomy and

define set of attributes for each outcome. These are used for planning lectures, assignments, tests, projects etc while developing their course files.

Each outcome is assessed in several courses to ensure that students acquire an appropriate level in terms of knowledge/skills of an outcome. The course coordinators collect the qualitative and quantitative data and use these for outcome assessment in a continual process. Each faculty pre- sets out targets for assessment of course outcomes and prepares analysis of their course outcome based on student performance and present the same to the DAC along with his/her suggestion for improvement. The course assessment is done at both formative and summative levels. The Program DAC studies the course analysis report of each faculty and decides course of corrective action if required. DAC designs the survey questionnaires along with targets against which the POs are to be assessed and planned schedule for their assessment and submits the same to the PAC for initiating action of sending out survey instruments to relevant alumni, employers and other external stakeholders. The PAC initiates action of indirect assessment of POs based on the pre-defined and agreed schedule with each DAC.

The DAC analyzes the collected data. If the assessment meets the performance targets the outcome is attained. Otherwise, corrective actions are initiated and results presented to the IACC which then presents the same to Academic Council and seeks their suggestions and approval for corrective action.

While all POs will be assessed through course outcomes at the end of every semester (Direct assessment) through evaluation of student performance in various courses aligned to a specific PO, the assessment of overall POs through indirect method will be done annual basis.

(ii) Indirect Assessment

a) Course Survey:

- The Course Survey questionnaire is prepared by the Course instructor in consultations with the Course coordinator.
- The Course Survey questionnaire is distributed to the students at the end of every semester.
- The Surveys so gathered is assessed with a rating of 5 for excellent, 4 for Very Good, 3 for

Good, 2 for Fair and 1 for Poor.

Table 3.8.1: Mapping of exit feedback questionnaire with POs & PSOs

S.No.	Parameter for evaluation	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Apply the knowledge of mathematics, science, engineering fundamentals to solvecomplexChemical engineering problems.	3												2	**2**
2	Apply research based knowledge to design and conduct experiments, analyze, synthesize and interpret the data pertaining to Chemical Engineering problems and arrive at valid conclusions.		3											2	**2**
3	Design solutions for Chemical engineering problems and design system components and processes that meet the specified needs with			3											**2**

	appropriate consideration for public health and safety.													
4	Function effectively either as a member or a leader in a multi-disciplinary activities.				3								2	**2**
5	Identify, formulate and analyze problems related to Chemical engineering and substantiate the conclusions using the first principles of sciences and engineering.					3								**2**
6	Develop consciousness of professional, ethical and social responsibilities as experts in the field of Chemical Engineering.						3							
7	Communicate the engineering activities to engineering society for documentation and presentation.							3					3	
8	The broad education including management								3					

	&finance necessary to understand the impact of engineering solutions in global, economic, environmental, and societal context													
9	Realize the need for lifelong learning and engage them to adopt technological changes in their specialized areas of Chemical engineering.									3				**2**
10	Continuously update their knowledge on contemporary issues.										3			3	**2**
11	Construct, choose and apply the techniques, resources and modern engineering tools required for Chemical Engineering applications.											3			**2**
12	Qualify in competitive examinations like GATE, IES, etc.												3		2

Table 3.8.2: Mapping of Alumni feedback questionnaire with POs & PSOs

S. No.	Parameter for evaluation	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	Are you pursuing any higher studies?												2		
2	What is your current career position?						3						2		
3	Have you been working as a consultant adopting any new technologies/Entrepreneur?					3		3							**3**
4	Are you enthusiastic in learning new technologies in the field of engineering?					2									**2**
5	Are you able to apply knowledge and technical skills so as to carry out tasks in the engineering field as and when required by the job specifications?	3	2	1	2										**2**
6	Are you able to understand the social and global issues to be considered while providing engineering solutions?			1			1	2							
7	Are there instances when you are able to Improve upon the design that was originally suggested?			3	3										
8	Are you able to integrate the knowledge acquired to provide optimal solution to the Research/real-time problems?													3	
9	Do you use modern technologies,					3									

	processes, and software/tools?														
10	Are you able to vary communication in your professional transaction?										3				
11	Do you follow professional and ethical code of conduct to Performa given task?								3						
12	Do you participate in collaborative projects / working groups in your workplace to meet common goals?									3	2				
13	Do you attend any conferences or seminars in your field to upgrade your skills?												3		
14	How well did your education prepare you for personal development?												2		
15	Are you able to integrate engineering and management principles for implementation of the projects?											3			

Table 3.8.3: Mapping of Employer feedback questionnaire with POs & PSOs

S.No.	Parameter for evaluation	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PSO1	PSO2
1	Are GIETU Graduates engaged in research and development activities?			1	3								1	
2	Are GIETU graduates in any key positions in your organization?							2	1	3	3	2	1	
3	Do you think GIETU graduates have the ability to work as a		2				2	2	1	1	3	3	1	

	freelance consultant?													
4	Do GIETU graduates have an understanding of Professional and ethical responsibility in Professional practice?						1		3					
5	Do you think graduates from GIETU possess the technical knowledge and skill needed to fulfill the job function?	3	2	2	3	3							3	**3**
6	Do GIETU graduates exhibit analytical skills?	3	3	3	3								3	
7	Do GIETU graduates possess the knowledge and Skills to devise solutions to unfamiliar problems?	3	3		3					3				
8	Did you find GIETU graduates able to learn a new tool or procedure or technique as and when required?					3								
9	Are GIETU graduates aware of the importance of social & global aspects						3	3						
10	How much are GIETU graduates aware of the effect of their work quality towards safety, society and environment?						3	3						
11	Do GIETU graduates work under stress well and are adaptable to changes in environment?							1		1				

12	Do GIETU graduates perform as individual, in a Team, and exhibit leadership qualities?									3				
13	Can GIETU graduates vary their approach in written and verbal communication according to the person or situation?										3			
14	Do you feel graduates from GIETU are able to Plan, organize & complete assigned projects?											3		**3**
15	Do graduates from GIETU upgrade their knowledge to address the contemporary issues?													

Table 3.8.5: Mapping of Parents feedback questionnaire with PEOs

Sl. No.	Parameter for evaluation	PEO1	PEO2	PEO3	PEO4
1	How happy are you with the performance of the student?	1	3	1	1
2	Improvement in the student's personality as compared to the same at the time of joining the institute?	2	1	3	3
3	Improvement in the student's communication skills as compared to the same at the time of joining institute?	2	1	1	3
4	How well did we do in transforming the student into a good and responsible citizen?	1	1	3	1
5	Feedback received by you from the student with regard to teaching.	3	2	2	3
6	Feedback received by you from the student with regard to extra-curricular activities.	3	1	2	3
7	Feedback received by you from the student with regard to laboratory facilities.	3	3	1	2

8	Feedback received by you from the student with regard to computer facilities.	1	2	-	3
9	Feedback received by you from the student with regard to general infrastructural facilities.	3	3		1
10	Feedback received by you from the student with regard to hostel facilities (only if applicable).	3	3		1
11	Feedback received by you from the student with regard to the student's ability to cope with other students.	1		1	2
12	Feedback received by you from the student with regard to the administration of the institute.	1	3		2
13	Given the circumstances under which you admitted the student in the institute, your level of satisfaction in realizing your objectives.	2	1	-	3
14	How strongly would you consider this institute for admitting another student, if you have to?	3		3	2

A. Feedback from Students – Semester Survey From

A questionnaire about the course is prepared by the course coordinator and the program coordinator, and is distributed to students to get their feedback at end of the semester to see whether the POs and PSOs are strongly or loosely attained.

Gandhi Institute of Engineering & Technology University (GIET University)

Gunupur-765 022

Semester Survey From

Name of the Department:

Name of the Student: Roll No:

Year/Sem. Programme:

S.N.	Program Outcomes(POS)	Excellent	Very Good	Good	Satisfactory	Poor
		[5]	[4]	[3]	[2]	[1]

1	**Engineering Knowledge** Were you able to apply the knowledge of Mathematics, Science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.					
2	**Problem analysis:** Were you comfortable in identifying, formulating reviewing, and research literature; Analyzing complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.					
3	**Design / Development of Solutions:** Were you able to design solutions for complex engineering problems and design system					

	components or processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural, society					
4	**Conduct investigations of complex problems** Was it easy to use research - based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.					
5	**Modern tool usage** Were you able to create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations					

6	**The engineer and society** Did you apply reasoning informed by the contextual knowledge to assess societal, health, safety legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice					
7	**Environment and sustainability** Did you understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.					
8	**Ethics:** were you able to apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.					

9	**Individual and team work** Did you function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings					
10	**Communication** Did you communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.					
11	**Project management and finance** Did you demonstrate knowledge and understanding of the engineering and management principles and apply these to one's					

	own work, as a member and leader in a team, to manage projects and in multi-disciplinary environments.					
12	**Life - long learning** How far you recognize the need for , and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change					

B. Feedback from students – Exit Survey

A questionnaire is prepared by the program coordinator, and is given to students at end of the program to get their feedback of that program. The results are analyzed to see whether the program outcomes are strongly or loosely attained.

	Gandhi Institute of Engineering & Technology University (GIET University) **Gunupur-765 022** **Student EXIT Survey Form** **Name of the Department:**

Personal Details

Name: _____

Branch: _____

College Roll No_____ **Regd. No:** _____

Email ID _____

Self-Mobile No : _____

Fathers Mobile No: _____

Mothers Mobile No: _____

Home Land Line No: _____

Permanent Address

C/o _____

At: _____ Po: _____

Via: _____ Dist.: _____

State: _____ Pin: _____

Parent Email ID: _____

Present Address

C/o _____

At: _____ Po: _____

Via: _____ Dist.: _____

State: _____ Pin: _____

Phone Number: _____

S.N.	Program Outcomes	Excellent	Very Good	Good	Satisfactory	Poor	PO
		(5)	(4)	(3)	(2)	(1)	
1	Infrastructural facilities such as Library, Laboratories, Class rooms, workshops						
2	How was encouragement for students participation in various co-curricular activities (seminars, conferences, guest lecturers etc.,)						

3	How is quality of academic resources – say teaching faculty, course material, guiding projects etc.,						
4	Canteen, Hostel and other campus facilities.						
5	How was encouragement towards extracurricular activities						
6	How about mentoring facility						
7	Are you placed in the Campus?	YES/NO if Your answer is yes mention the name of the company:					
8	If going for Higher Studies, give details?						

9	Want to be Proud Alumnus?	Yes / No :
10	Your suggestions for betterment:	
		Signature of the Student

C. Feedback from parents:

The Program coordinator will collect the feedback from the parents about their experience and also their wards opinion on the program. It will be done once in every semester. It helps to improve the overall system.

Dear Sri/Smt. _____

We request you to assist us by answering a few questions listed below in connection with our services to your son /daughter /ward studying in our institute. Your feedback would be invaluable to us in improving our teaching processes to serve the needs of our students better.

Name of the student : _____

Class : _____

Regn.No. : _____

Please tick the appropriate ratings :

1 = Poor, 2 = Less than satisfactory, 3 = Satisfactory, 4 = Very good , 5 = Excellent

1	How happy are you with the performance of the student?	1	2	3	4	5
2	Improvement in the student's personality as compared to the same at the time of joining the institute?					
3	Improvement in the student's communication skills as compared to the same at the time of joining institute?					
4	How well did we do in transforming the student into a good and responsible citizen?					
5	Feedback received by you from the student with regard to teaching.					
6	Feedback received by you from the student with regard to extra-curricular activities.					
7	Feedback received by you from the student with regard to laboratory facilities.					
8	Feedback received by you from the student with regard to computer facilities.					
9	Feedback received by you from the student with regard to general infrastructural facilities.					
10	Feedback received by you from the student with regard to hostel facilities (only if applicable).					
11	Feedback received by you from the student with regard to the student's ability to cope with other students.					
12	Feedback received by you from the student with regard to the administration of the institute.					
13	Given the circumstances under which you admitted the student in the institute, your level of satisfaction in realizing your objectives.					

14	How strongly would you consider this institute for admitting another student, if you have to?					

Signature with date

Name:

For office use only:

Overall average:

D. Feedback from the recruiters

A questionnaire is prepared by the program coordinator and is given to the recruiters during recruitment process to see whether the program outcomes are strongly or loosely attained.

DEPARTMENT OF _____

SURVEY QUESTIONNAIRE TO EMPLOYER

Sir,

Our university is falling in line with outcome-based education in continuity with the international practices (as per Washington Accord). The assessment of the outcome has to be through a survey (such as Graduate survey, Alumni survey, parent feedback, employer survey etc.). The following questions need your valued consideration. Please find some time and send in your answers to the following questions. This report will be kept confidential.

Thanking you

Yours

Truly,

Dean,

SoET

Company Name :

Mailing Address :

City	State	Pin code
Employment details	year	Mobile no. E-mail id:

S.N.	Questions	Graduate attributes	POs	Excellent [5]	Very Good [4]	Good [3]	Satisfactory [2]	Poor [1]
1	Your views on strengths of our graduates?	i) Engineering Knowledge ii) Ethics iii) Individual & Team Work iv) Communication v) Project Management & Finance vi) Life Long Learning	PO1 PO8 PO9 PO10 PO11 PO12					

2	How did you find our student in applying the knowledge of maths, science in the solution of complying engineering problems?	i) Engineering Knowledge ii) Design & Development of solution iii) Conduct Investigations of complex problems iv) Modern tool usage v) The engineer & Society	PO1 PO3 PO4 PO5 PO6					
3	How you found our student with respect to technical skills?	i) Problem Analysis ii) Design & Development of solution iii) conduct Investigations of complex problems	PO2 PO3 PO4					
4	How you rate our student with respect to their ethical and moral values?	Ethics	PO8					

5	How you rate our students with respect to work?	Individual & Team Work	PO9					
6	How you find our curriculum with respect to industry?	Life Long Learning	PO12					
7	How you rate our student with respect to communication skills?	Communication	PO10					
8	How you rate our student with respect to being open to new ideas and learning new technologies	Lifelong learning	PO12					
9	How do you rate our student with respect overall performance in terms of	Adheres to all 12 Graduate Attributes	PO 1 to PO12					

	percentage contribution to your organization?							
10	Were you happy with the support you received from the university during placement drive?	NA	NA					

NA: NOT APPLICABLE

List of PEO's and POs is appended for your reference

Your detailed comments on our graduate employee

E. Feedback from the academic/industry experts

Curriculum reviews by Industry/Academic experts provide a broad-based internal and external feedback regarding the relevance and organization of a program's curriculum. It provides verifiable evidence for significant change (individual course competencies) within a program when change is appropriate.

F. Feedback from alumni

A questionnaire is prepared by the program and course coordinator and is given to the alumni. It will be done once in every year on August 15th to see whether the PO's and PSO's are strongly or loosely attained.

ALUMNI FEED BACK FORM

We shall be thankful to and appreciate you, if you can spare some of your valuable time to fill up this feedback form and give us your valuable suggestion for further improvement of the university programme. Your valuable input will be of great use to improve the quality of our academic program and enhance the credibility of the university.

Yours Truly,

Dean, SoET

Name of the Alumni:	Roll No:
Programme:	Dept.:
Year of Graduation	
Name of the Organization where you are working	
Designation	

Please give your overall assessment of the Institute academics. Please rate us on

1. Very Good (VG)
2. Good (G)
3. Fair (F)
4. Satisfactory (S)
5. Unsatisfactory (UN)

6. Not applicable (NA)								
S.N.	Details	Graduate Attributes	Program Outcome	Assessment				
				VG	G	F	S	UN
1	Environment	NA						
2	Infrastructure	Modern Tool Usage	PO 5					
3	Lab facilities	Modern Tool usage	PO 5					
4	Faculty	i) Engineering knowledge ii) Ethics iii) Communication	PO1, PO8, PO10					
5	Project Guidance Other Co-Curricular activities	i) Engineering Knowledge ii) Problem Analysis iii) Design / Development of Solutions iv) Solving complex problems v) Engineer & Society iv) Modern Tool usage v) Individual & Team Work vi) Communication	PO1, PO2, PO3 PO4 PO5, PO6 PO9, PO10					
6	Environment and sustainability related programs	i) Environment and sustainability:	PO 7					
7	Quality of Support Material	NA	NA					

8	Training and placement	i) Individual & Team Work ii) Communication	PO 9 PO 10					
9	Library facilities	NA	NA					
10	Canteen facilities	NA	NA					
11	Hostel facilities	NA	PO 9					
12	Overall rating of the Department	NA	NA					
13	Overall rating of the College	NA	NA					
14	Alumni Association / Networking of old friends	NA	NA					

Your suggestions

1. Relevance of curriculum in your job.

2. Need any change in curriculum and syllabi.

3. Improvement in Teaching Learning process.

4. Have you learned the basic concepts through your projects?

5. Any other suggestions / Comments:

……

……

……

Signature

Name:

Date:

Program shall set Program Outcome attainment levels for all POs & PSOs.

(The attainment levels by direct (student performance) and indirect (surveys) are to be presented through Program level Course – PO & PSO matrix as indicated).

PO attainment:

Table 3.8.6: Overall PO Attainment for the Batch 2020-2024

COURSE	PO1	PO2	PO3	PO4	PO5	PO 6	PO7	PO8	PO9	PO10	PO11	PO12
Direct Attainment	**2.25**	**2.12**	**1.76**	**2.32**	**1.58**	**1.6**	**1.83**	**1.38**	**1.6**	**2**	**1.76**	**1.3**
Direct Attainment (80%)	1.8	1.7	1.40	1.86	1.26	1.28	1.46	1.10	1.28	1.6	1.40	1.04
Indirect Attainment	3	3	2.8	2.7	2.2	2.0	2.8	2.7	2.3	2.0	1.8	2.5
Indirect Attainment (20%)	0.6	0.6	0.56	0.54	0.44	0.4	0.56	0.54	0.46	0.4	0.36	0.5

Overall Attainment	2.4	2.3	1.96	2.4	1.7	1.68	2.02	1.64	1.74	2.0	1.76	1.54
Overall Attainment (%)	**80**	**76.6**	**65.33**	**80**	**56.66**	**56**	**67.33**	**54.66**	**58**	**66.66**	**58.66**	**51.33**
Target	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

Table 3.8.7: Overall PO Attainment for the Batch 2019-2023

COURSE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Direct Attainment	2.25	2.0	2.0	2.3	1.5	1.6	1.6	1.4	1.5	2	1.5	1.3
Direct Attainment (80%)	1.8	1.6	1.6	1.84	1.2	1.28	1.28	1.12	1.2	1.6	1.2	1.04
Indirect Attainment	3	2.9	2.7	2.8	2.4	2.2	2.9	2.6	2.2	2.4	2.0	2.6
Indirect Attainment (20%)	0.6	0.58	0.54	0.56	0.48	0.44	0.58	0.52	0.44	0.48	0.40	0.52
Overall Attainment	2.4	2.12	2.14	2.4	1.68	1.72	1.86	1.64	1.64	2.08	1.6	1.56
Overall Attainment (%)	**80**	**72.66**	**71.33**	**80**	**56**	**57.33**	**62**	**54.66**	**54.66**	**69.33**	**53.33**	**52**
Target	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

Table 3.8.8: Overall PO Attainment for the Batch 2018-2022

COURSE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Direct Attainment	2.3	2.1	1.4	2.3	2.1	2.0	1.8	1.5	1.6	1.8	2.0	1.7
Direct Attainment (80%)	1.84	1.68	1.12	1.84	1.68	1.6	1.44	1.2	1.28	1.44	1.6	1.36
Indirect Attainment	2.8	2.7	2.8	2.5	2.5	2.1	2.8	2.7	2.1	1.3	1.2	2.4
Indirect Attainment (20%)	0.56	0.54	0.56	0.5	0.50	0.42	0.56	0.54	0.42	0.26	0.24	0.48
Overall Attainment	2.4	2.22	1.68	2.34	2.12	2.20	2.0	1.74	1.7	1.7	1.84	1.84
Overall Attainment (%)	**80**	**74**	**56**	**78**	**72.66**	**67.33**	**66.66**	**58**	**56.66**	**56.66**	**61.33**	**61.33**
Target	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%

PSO Attainment:

Table 3.8.9: Overall PSO Attainment for the Batch 2020-2024

Attainment	**PSO1**	**PSO2**	**PSO3**
Direct Attainment	1.81	1.75	1.61
Weightage (80%) – A	1.45	1.4	1.28
Indirect Attainment	3.0	2.8	2.6
Weightage (20 %) - B	0.6	0.56	0.52
Attainment Level = (A+B)	**2.05**	**1.96**	**1.8**
Target Level (80 %)	68.33%	65.33%	60%

Table 3.8.9: Overall PSO Attainment for the Batch 2019-2023

Attainment	PSO1	PSO2	PSO3
Direct Attainment	2.1	1.8	1.7
Weightage (80%) – A	1.68	1.44	1.36
Indirect Attainment	3	2.8	2.6
Weightage (20 %) - B	0.6	0.56	0.52
Attainment Level = (A+B)	2.28	**2**	**1.88**
Target Level (80 %)	76	66.66%	62.66

Table 3.8.10: Overall PSO Attainment for the Batch 2018-2022:

Attainment	PSO1	PSO2	PSO3
Direct Attainment	1.8	1.8	1.7
Weightage (80%) – A	1.44	1.44	1.36
Indirect Attainment	2.6	2.5	2.4
Weightage (20 %) - B	0.52	0.5	0.48
Attainment Level = (A+B)	**1.96**	1.94	**1.84**
Target Level (80 %)	65.33%	64.66	61.33

PO Attainment using assessment tools:

Table 3.8.10: PO attainment value using direct assessment tools for R-19

Courses	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
C101	2	2.75	-	-	-	-	-	-	-	-	1.5	2.75

C102	1.8	2.0									1.8	3.0
C103	3.0	2.5									3.0	2.5
C104	2.5	2.0	2.0	2.5							1.25	2.0
C105	3.0	2.75	1.75								3.0	2.75
C106	2.5					2.0		1.0		3.0		1.0
C111	1.8	2.0									1.8	3.0
C112	2.5	2.75										
C113	2.5	2.0		2.0			1.0					1.0
C114	3.0	2.75	2.5									
C115	2.7	2.0										
C116	2.75	2.5	3.0	1.5								
C201	1.5	2.75										
C202	1.5	1.0										
C203	2.4	2.4										
C204	1										1.75	
C205	2.25	2.25									1.0	1.0
C206	2.0	1.5										
C211	2.0	2.0	1.0									
C212	2.5	2.0	1.5	1.5	2.0	1.0						1.0
C213	2.5	1.25	1.25									
C214	2.5	1.5	2.0									
C215	2.75	1.0	2.0	1.0	1.5		2.0	2.0				1.0
C216	2.0	1.0	1.5	2.0								1.0
C301	2	1.6	2.0	2.0	2.0							
C302	3.0	3.0		2.0	1.0	2.6						1.0
C303	1.5	1.0	2.5	1.75	1.3		2.0	1.0				2.0
C304	1.5	1.5	2.3	2.3	1.6	1.0			1.0			2.0

C305	1.25	1.25	2.5	1.5								
C306	2.5	1.5	2									
C311						1.5	2.0					
C312	2.0	1.75	2.0	2.0	2.25							1.0
C313	2.5	1.5	2.0	2.25			2.0					2.0
C314	1.0	2.0	1.6	2.0	1.3		1.5	2.0	1.0			1.0
C315	2.0	1.0	2.75	2.25	2.0	2.0			1.0			1.0
C316	2.5	2.0	1.5	1.5	2.0							1.0
C401	2.0	3.0	2.0	2.0	1.5	2.0		1.0				2.0
C402	2.0	2.0	1.6	2.25	1.25	2.0			2.0			1.0
C403	1.5	1.5	1.75	1.75	1.75							1.0
C404	2.5		2.5	1.75	1.6	2.0	2.0	1.0				2.0
C405	2.0	2.0	1.6	1.3		1.5	2.3					
C406	2.5	1.75		3.0								
C411	2.5	1.5	2.0									
C412	1.0	1.5	1.0	1.6	2.0	2.0	2.0					1.0
C413	1.5	1.5	2.0	1.75	2.0			3.0				2.0
C414	1.75	2.0	0.75									
C415	2.0	2.0	2.25	2.0	2.0			2.0	1.0	1.0	1.0	2.0
Average	2.17	1.89	1.84	1.82	1.61	1.63	1.68	1.44	1	1.33	1.78	1.62

Criterion 4: Students' Performance (120)

Table No. 4A: Admission details for the program excluding those admitted through multiple entry and exit points

Item (Information is to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	**CAY**	**CAYm1**	**CAYm2**	**CAYm3**	**CAYm4 (LYG)**	**CAYm5 (LYGm1)**	**CAYm6 (LYGm2)**
N= Sanctioned intake of the program (as per AICTE /Competent authority)	60	60	60	60	30	30	30
N1= Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program	53	56	60	51	30	27	19
N2= Number of students admitted in 2nd year in the same batch via lateral entry including leftover seats	0	0	2	1	0	0	0
N3= Separate division if any	0	0	0	0	0	0	0
N4= Total no. of students admitted in the 1st year via all supernumerary quotas	0	0	0	0	0	0	0
Total number of students admitted in the program (N1 + N2 + N3 + N4) - excluding those admitted through multiple entry and exit points.	53	56	62	52	30	27	19

CAY= Current Academic Year.
CAYm1= Current Academic Year Minus 1= Current Assessment Year.
CAYm2= Current Academic Year Minus 2= Current Assessment Year Minus 1.
LYG= Last Year Graduate.
LYGm1= Last Year Graduate Minus 1.
LYGm2= Last Year Graduate Minus 2.

Table No. 4B: Admission details for the program through multiple entry and exit points.

Item (No. of students admitted/exited through multiple entry and exit points) in the respective batch		CAY 2024-25	CAY m1 2023-24	CAY m2 2022-23	CAY m3 2021-22	CAY m4 (LYG) 2020-21	CAYm5 (LYGm 1) 2019-20	CAYm6 (LYGm 2) 2018-19
N5(Multiple entry) N5=N52+N53+N 54	N52= No. of students admitted in 2nd year via multiple entry and exit points in same batch	0(NA)	0	0	0	0	0	0
	N53= No. of students admitted in 3rd year via multiple entry and exit points in same batch	0(NA)	0	0	0	0	0	0
	N54= No. of students admitted in 4th year via multiple entry and exit points in same batch	0(NA)	0	0	0	0	0	0
	N5=N52+N53+N54	0(NA)	0	0	0	0	0	0
N6 (Multiple exit) N6=N61+N62+N 63	N61= No. of students exits after 1st year via multiple entry and exit points in same batch	0(NA)	0	0	0	0	0	0
	N62= No. of students exit after 2nd year via multiple entry and exit points	0(NA)	0	0	0	0	0	0
	N63= No. of students exit after 3rd year via multiple entry and exit points in same batch	0(NA)	0	0	0	0	0	0
	N6=N61+N62+N63	0(NA)	0	0	0	0	0	0

1. Example: Multiple entry for Batch LYG m2 (2017-18):
   - ❖ No. of students admitted through multiple entry: 4
   - ❖ Breakdown: 2(a) + 1(b) + 1(c), where:
     - o a = no. of students admitted in 2nd year
     - o b = no. of students admitted in 3rd year
     - o c = no. of students admitted in 4th year
   - ❖ Therefore, for batch LYG m2 (2017-18):
     - o 2 students were admitted in the 2nd year.
     - o 1 student was admitted each in the 3rd and 4th years.
2. Example: Multiple exit for Batch LYG m2 (2017-18):

❖ No. of students exiting/dropped through multiple exit: 2
❖ Breakdown: 1(d) + 1(e) + 0(f)), where:
o d = no. of students exiting after 1st year
o e = no. of students exiting after 2nd year
o f = no. of students exiting after 3rd year
❖ Therefore, for batch LYG m2 (2017-18):
o 1 student exited after the 1st year.
o 1 student exited after the 2nd year.
o No students exited after the 3rd year.

Table No. 4C: No. of students graduated within the stipulated period of the program.

Year of entry	**Total no. of students (N1 + N2 + N3+ N4+N5-N6 as defined above)**	Number of students who have successfully graduated in the stipulated period of study **[Total of with Backlogs+ without Backlogs]**			
		I Year	**II Year**	**III Year**	**IV Year**
CAY (2024-25)	53 (53+0+0+0+0(NA)-0(NA)				
CAYm1 (2023-24)	56 (56+0+0+0+0(NA)-0(NA)	56			
CAYm2 (2022-23)	62 (60+02+0+0+0(NA)-0(NA)	60	62		
CAYm3 (2021-22)	52 (51+01+0+0+0(NA)-0(NA)	51	52	52	
CAYm4 (LYG)	30 (30+0+0+0+0-0)	30	30	30	29
CAYm5 (LYGm1)	27 (27+0+0+0+0-0)	27	27	27	26
CAYm6 (LYGm2	19 (19+0+0+0+0-0)	19	19	19	19

4.1. Enrolment Ratio in the First Year (20)

ER Points= 20 * (Average ER/100)

Table No.4.1.1: Student enrolment ratio in the 1st year.

Item (Students enrolled in the First Year on average over 3 academic years (CAY, CAYm1 and CAYm2))	**CAY 2024-25**	**CAYm1 2023-24**	**CAYm2 2022-23**
N= Sanctioned intake of the program in the 1st year (as per AICTE/Competent authority)	60	60	60
N1= Total no. of students admitted in the 1st year minus the no. of students, who migrated to other programs/ institutions plus no. of students, who migrated to this program	53	56	60
N4= Total no. of students admitted in the 1st year via all supernumerary quotas	0	0	0
Enrolment Ratio (ER)= (N1+N4)/N	88.33	93.33	100
Average ER= (ER_1+ ER_2+ ER_3)/3	93.88		

4.2. Success Rate of the Students in the Stipulated Period of the Program (15)

Success Rate (SR) = (No. of students who graduated from the program in the stipulated course duration) /(No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).

Average SR = Mean of SR for the past three batches.

SR Points = 1.5 * Average SR/10.

Table No.4.2.1: The success rate in the stipulated period of a program.

Item	**LYG**	**LYGm1**	**LYGm2**
A*= (No. of students admitted in the 1st year of that batch and those actually admitted in the 2nd year via lateral entry, plus the number of students admitted through multiple entry (if any) and separate division if applicable, minus the number of students who exited through multiple entry (if any).	30	27	19

B=No. of students who graduated from the program in the stipulated course duration	29	26	19
Success Rate (SR)= (B/A) * 100	96.66	96.29	100
Average SR of three batches ((SR_1+ SR_2+ SR_3)/3)	97.65%		

Note *: If the value of A in Table No. 4.2.1 is less than the sum of the sanctioned intake (N) and the lateral entry including leftover seats (N2), then the value of A in Table No. 4.2.1 should be the sum of the sanctioned intake (N) and the lateral entry including leftover seats (N2).

4.3. Academic Performance of the First-Year Students of the Program (10)

Academic Performance = Average Academic Performance Index (API), where

API = ((Mean of 1st Year Grade Point Average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 1st year/10))
* (Number of successful students/number of students appeared in the examination)

Successful students are those who have to proceeded to the 2nd year.
Table No.4.3.1: Academic Performance of the First-Year Students of the Program.

Academic Performance	**CAYm1**	**CAYm2**	**CAYm3**
X= (Mean of 1st year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 1st year/10)	7.9	7.8	7.7
Y= Total no. of successful students	52	58	48
Z = Total no. of students appeared in the examination	56	60	51
API = X* (Y/Z)	7.33	7.54	7.24
Average API = (AP1 + AP2 + AP3)/3	7.37		

4.4 Academic Performance of the Second Year Students of the Program (10)

Academic Performance = Average Academic Performance Index (API), where

API = ((Mean of 2nd Year Grade Point Average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2nd Year/10))

* (Number of successful students/number of students appeared in the examination).

Successful students are those who have proceeded to the 3rd year.

Table No.4.4.1: Academic Performance of the Second Year Students of the Program.

Academic Performance	**CAYm1**	**CAYm2**	**CAYm3**
X= (Mean of 2nd year grade point average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 2rd year/10)	7.9	7.7	7.8
Y= Total no. of successful students	59	50	29
Z =Total no. of students appeared in the examination	62	52	30
API = X* (Y/Z)	7.51	7.40	7.54
Average API = (AP1 + AP2 + AP3)/3	7.48		

4.5 Academic Performance of the Third Year Students of the Program (10)

Academic Performance = Average Academic Performance Index (API), where

API = ((Mean of 3rd Year Grade Point Average of all successful students on a 10-point scale) or (Mean of the percentage of marks of all successful students in 3rd Year/10))

* (Number of successful students/number of students appeared in the examination).

Successful students are those who have proceeded to the 4th year.

Table No.4.5.1: Academic Performance of the Third Year Students of the Program

Academic Performance	**CAYm1**	**CAYm2**	**CAYm3**
X= (Mean of 3rd year grade point average of all successful students on a 10-point scale) or (Mean of	7.8	7.7	7.6

the percentage of marks of all successful students in 3rd year/10)			
Y= Total no. of successful students	50	28	26
Z= Total no. of students appeared in the examination	52	30	27
API = X* (Y/Z)	7.5	7.18	7.31
Average API = (AP1 + AP2 + AP3)/3	7.33		

4.6 Placement, Higher Studies and Entrepreneurship (30)

Placement index points= 0.3 * Average placement index (P).

Table No. 4.6.1: Placement, higher studies, and entrepreneurship details.

Academic Performance	**CAYm1**	**CAYm2**	**CAYm3**
FS*=Total no. of final year students	30	27	19
X= No. of students placed	25	18	11
Y= No. of students admitted to higher studies	05	7	6
Z= No. of students taking up entrepreneurship	00	01	01
X + Y + Z =	30	26	18
Placement Index (P) = (((X + Y + Z)/FS) * 100)	100	96.29	94.73
Average placement index = (P_1 + P_2 + P_3)/3	97.00		

Note *: If the value of FS in Table No. 4.6.1 is less than the sum of the sanctioned intake (N) and the lateral entry including leftover seats (N2), then the value of FS in Table No. 4.6.1 should be the sum of the sanctioned intake (N) and the lateral entry including leftover seats (N2).

4.7 Professional Activities (25)

4.7.1 Professional Societies/ Bodies, Chapters, Clubs, and Professional Engineering Events Organized (05)

(Provide a list of active professional societies/bodies, chapters, and clubs that exist at the departmental/cluster level in the past 3 years, and also provide a list of events organized by the professional societies, chapters, and clubs over the past 3 years.)

Table No. 4.7.1.1: List of active professional societies/bodies/chapters/clubs.

S.N.	Name of the Professional Societies/Bodies, Chapters, Clubs
1	BIOCANS: Student association of Department of Biotechnology
2	ISTE (Indian Society for Technology in Education)
3	Institute of Engineers, India (IEI)

Table No. 4.7.1.2: List of events/programs organized.

S.N.	Name of the Professional Societies/Bodies/Chapters/ Clubs	Name of the Event	National/ International level	Date of Event	POs/PSOs
CAYm1(2024-25)					
1	Microbiology Society of India	Microbiology Awareness Programme	National	18.09.2024	PO5, PO10, PSO3
2	Teacher day Observation	Teacher's Day	National	05.09.2024	PO10, PO11, PSO1
3	Best student Award	Departmental Best Student	Departmental	B.Tech 7th Semester	PO10, PO11, PSO1
4	National startup day observation	Young founder and emerging entrepreneur	Departmental	16 to 20 January 2024	PO10, PO11, PSO1
5	(Five-05) days Hands on Training workshop on	Liquid biofertilizer formulation and Production	Departmental	26th April to 29th April 2024	PO10, PO11, PSO1

6	Global Bio India Road Show	Academic Entrepreneurship ecosystem for translational and interdisciplinary research	Departmental	23.08.2024	PO1, PO7, PSO1
7	National Conference on Supported by DST-Science and Engineering Research Board (SERB), Govt. of India	Recent Advancement of Intelligent-IoT for Agri-allied Biotechnology for Human welfare	Departmental	10-11th August 2024	PO4, PO5, PSO2
8	ISTE	National Engineers Day	National	15th Sept, 2023	PO1, PO6, PSO1
CAYm2(2023-24)					
1	Hands on Training	Sothern Blotting, Workshop	Departmental	15.02.2023	PO3, PO6, PSO2
2	Seminar	Pollution- phyto remediation	Departmental	24.02.2023	PO3, PO6, PSO3
3	(Five-05) days Hands on Training workshop	Immunological Techniques	Departmental	31.03.2023-04.04.2023	PO3, PO6, PSO3
4	National Webinar	Bio Fertilization Production: A Bio-Entrepreneurship Avenue	Departmental	09.05.2023	PO5, PO8, PSO2
5	FDP	Advancement of Agriculture Biotechnology	Departmental	18.05.2023	PO1, PO6, PSO1
6	Teacher day Observation	Teacher's Day	National	05.09.2023	PO3, PO6, PSO2
CAYm3(2022-23)					
1	AICTE-ISTE sponsored induction/refresher programme	Role of biotechnology in Mitigation of pollution and Restration	Departmental	11thJan-17thJan,2022	PO1, PO6, PSO1
2	Webinar by DBT-RMGE	Funding opportunities for Product Development	Departmental	22nd March	PO3, PO6, PSO3

3	Two days National seminar	On recent advances in bioscience & Biotechnology	Departmental	Aug26th-Aug27th,2022	PO3, PO6, PSO3
4	Silver jubilee Special Talk	Challenges in Development of Bio-Therapeutics	Departmental	Sept21st 2022	PO5, PO8, PSO2
5	Two Days Hands on training	Western Blotting for protein Detection	Departmental	14th Nov-15th Nov,2022	PO1, PO6, PSO1
6	A DST Sponsored National workshop	"Raising Awareness on Urban Air Quality,Climate Change,Health & e-Resilience."	Departmental	23rd Dec,2022	PO3, PO6, PSO2
7	Teacher day Observation	Teacher's Day	National	05.09.2022	PO10, PO11, PSO1

2024-25

Microbiology Society of India Microbiology Awareness Programme

Observation of Teachers' Day

Departmental Best Student

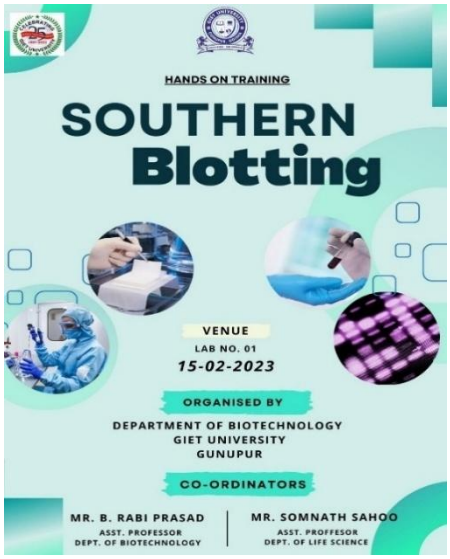
Young founder and emerging entrepreneur

Liquid biofertilizer formulation and Production

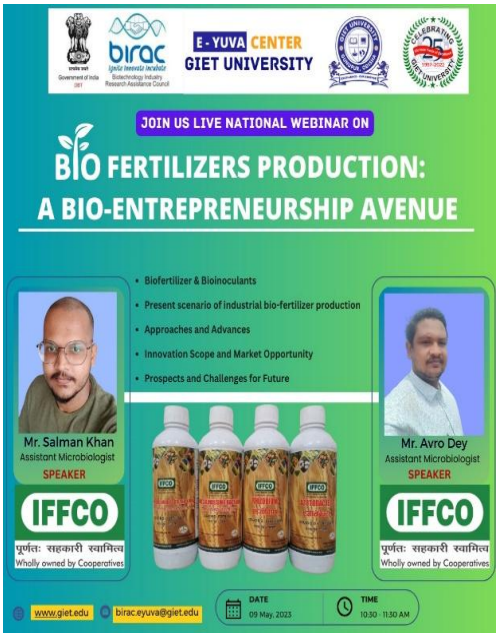
Global Bio India Road Show (Academic Entrepreneurship ecosystem for translational and interdisciplinary research)

Recent Advancement of Intelligent-IoT for Agri-allied Biotechnology for Human welfare

2023-24



(Sothern Blotting, Workshop)



Bio Fertilization Production:
A Bio- Entrepreneurship Avenue

Advancement of Agriculture Biotechnology

(Department of Biotechnology, GIET University signed Memorandum of Understanding (MOU) with Microbial Societv India (MSI Unit).

Observation of Teacher's Day

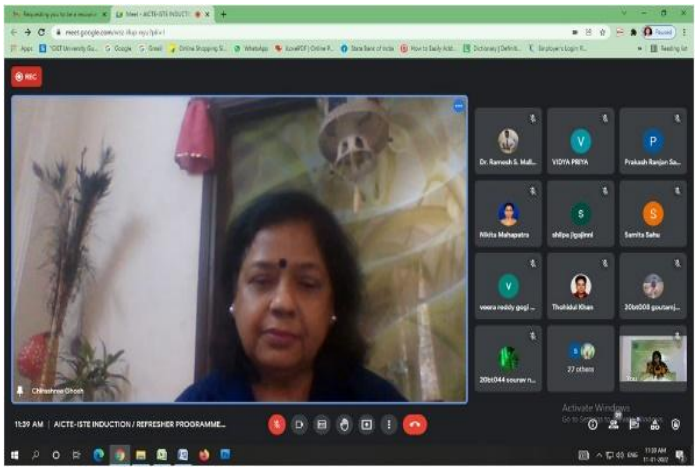
2022-23

Role of biotechnology in Mitigation of pollution and Restoration

27.8.2022

ଜୈବ ପ୍ରଯୁକ୍ତି ବିଭାଗର ଜାତୀୟ ଆଲୋଚନାଚକ୍ର ଉଦ୍‌ଘାଟିତ

On recent advances in bioscience & Biotechnology



Role of biotechnology in Mitigation of pollution and Restoration

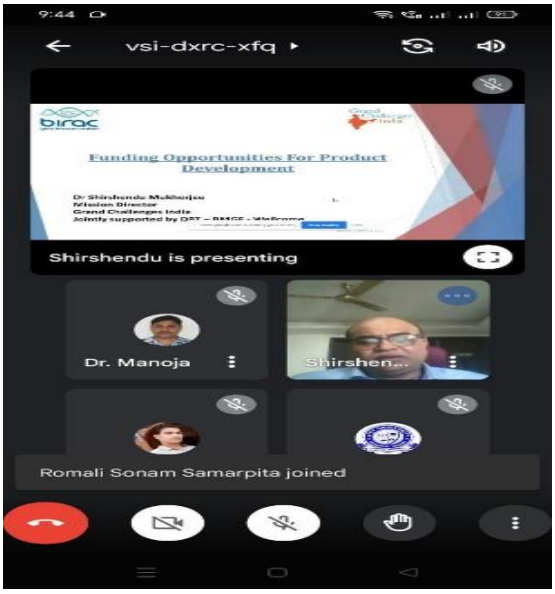
Role of biotechnology in Mitigation of pollution and Restoration

Western Blotting for protein Detection

Raising Awareness on Urban Air Quality,Climate Change,Health & e-Resilience

Funding opportunities for Product Development

Raising Awareness on Urban Air Quality,Climate Change,Health & e-Resilience



Funding opportunities for Product Development

4.7.2 Student's Participations in Professional Events (10)

(Provide details of students, who have participated at other institutes in various professional events, such as hackathons, codeathons, ideathons, etc., over the past 3 years.)

Table No. 4.7.2.1: List of students participated in professional events.

S.N.	Name of the Student	Name of the Event	National/ International level	Date of Event	Name of the award if any
CAYm1 (2024-25)					
1	Ankit Meher	E-YUVA Fellowship at the DBT-BIRAC E-YUVA Center, GIET University	National	01 June 2024	fellowship for 12 months (2500/- per month) and a research grant of 2.5 lakhs for the project
2	Ankit Meher	Global Bio-India 2024 , New Delhi	International	12 to 14 sep 2024	
3	Sriya Laxmi Dora	InoLevel Invopreneur Competition , DPSRU Mega Innovation Festival	National	19th March - 21th March 2025	2nd Position (Team Biohorizon)
4	Sriya Laxmi Dora	Hack Forge 1.0 (24-hour Hackathon under MSME Initiative)	National	15th-16th February 2025	Certificate of Appreciation for Best Innovation
5	Sriya Laxmi Dora	MSME Idea Hackathon 4.0	National	29th October	Top 30 Regional University Level Ideas (Forwarded to Delhi)
6	Sriya Laxmi Dora	Startup Odisha Innovation Challenge -	National	9th January	2nd Position

		Utkarsh Odisha,2025			
7	Sriya Laxmi Dora	District-Level Yuva Utsav - INDIA @ 2047	National	9th January 2025	2nd Position (Cash prize ₹5000)
8	Sriya Laxmi Dora	Alpha ion DBT-ILS Incubate (BIRAC, GIET University, Govt of India)	National	15th January - 15th March 2025	Participation
9	Amaya Ranjan Mohapatra	InoLevel Invopreneur Competition, DPSRU Mega Innovation Festival	National	19th March - 21th March 2025	2nd Position (Team Biohorizon)
10	Amaya Ranjan Mohapatra	Hack Forge 1.0 (24-hour Hackathon under MSME Initiative)	National	15th-16th February 2025	Certificate of Appreciation for Best Innovation
11	Amaya Ranjan Mohapatra	MSME Idea Hackathon 4.0	National	29 October 2024	Top 30 Regional University Level Ideas (Forwarded to Delhi)
12	Amaya Ranjan Mohapatra	Startup Odisha Innovation Challenge - Utkarsh Odisha,2025	National	9 january 2025	2nd Position
13	Amaya Ranjan Mohapatra	District-Level Yuva Utsav - INDIA @ 2047	National	9th January 2025	2nd Position (Cash prize ₹5000)
14	Archita Mishra	InoLevel Invopreneur Competition, DPSRU	National	19th March - 21th March 2025	2nd Position (Team Biohorizon)

		Mega Innovation Festival			
15	Archita Mishra	Hack Forge 1.0 (24-hour Hackathon under MSME Initiative)	National	15th-16th February 2025	Certificate of Appreciation for Best Innovation
16	Archita Mishra	MSME Idea Hackathon 4.0	National	2024	Top 30 Regional University Level Ideas (Forwarded to Delhi)
17	Archita Mishra	Startup Odisha Innovation Challenge - Utkarsh Odisha,2025	National	9th January 2025	2nd Position
18	Archita Mishra	District-Level Yuva Utsav - INDIA @ 2047	National	9th January 2025	2nd Position (Cash prize ₹5000)
19	Archita Mishra	Alphaion DBT-ILS Incubate (BIRAC, GIET University, Govt of India)	National	15th March 2025	Biosensors-Based Water Contamination Testing Kit
20	RUDRA NARAYAN BEHERA	ANVESHAN 2024	National	JANUARY 17-18 2025	ANVESHAN ZONAL LEVEL PARTICIPATION CERTIFICATE
21	RUDRA NARAYAN BEHERA	GBI 2024	INTERNATIONAL	12-14 sep 2024	
22	Rudra Narayan Behera	E-YUVA Fellowship at the DBT-BIRAC E-YUVA Centre, GIET University, Gunupur	National	01 june 2024	fellowship for 12 months 2500/- per month and a research grant of 2.5 lakhs for the project

23	Trushna Rani Nahak	East zonal round in ANVESHAN 2024	National	17 &18 January, 2025	ANVESHAN ZONAL LEVEL PARTICIPATION CERTIFICATE
24	Trushna Rani Nahak	Global Bio India 2024	INTERNATIONAL	12-14 sep 2024	
25	Priyambada Behera	Anveshan 2024 East Zonal round	National	17-18 January, 2025	ANVESHAN ZONAL LEVEL PARTICIPATION CERTIFICATE
26	Priyambada Behera	Global Bio India 2024	INTERNATIONAL	12-14 sep 2024	
27	Abhay Panda	InoLevel Invopreneur Competition, DPSRU Mega Innovation Festival	National	19th March - 21th March 2025	2nd Position (Team Biohorizon)
28	Abhay Panda	Hack Forge 1.0 (24-hour Hackathon under MSME Initiative)	National	15th-16th February 2025	Certificate of Appreciation for Best Innovation
29	Abhay Panda	Alphaion DBT-ILS Incubate (BIRAC, GIET University, Govt of India)	National	15th January - 15th March 2025	Biosensors-Based Water Contamination Testing Kit
30	Abhay Panda	National Intellectual Property Awareness Mission (IP Awareness Training Program)	National	15th March 2023	Certificate of Participation
31	Abhay Panda	Hands-on Workshop on 3D/2D Modelling, Design & Printing	National	February 2025	Completion certificate

		using SolidWorks			
32	Abhay Panda	National Science Day (UNIVERSITY LEVEL)	National	28th February 2025	2nd Position In Idea Pitching Competition
33	Abhay Panda	12-week Course on Cell Biology by NPTEL	National	Aug-Oct 2023	Participation Certificate
34	Abhay Panda	8-week Course on Biomimicry	National	Jul-Sep 2024	Participation Certificate
35	Somesh Ku. Dash	LAN Gaming - Valorant 1st	National	21st,22nd, 23rd Dec 2024	1st Position
36	Anisha Behera	Tug of War (University level)	National	21st,22nd, 23rd Dec 2024	Winner
37	Dinesh Tanty	Football (University level)	National	21st,22nd, 23rd Dec 2024	Runners up
38	Soumyashree Bastia	Tug of War (University level)	National	21st,22nd, 23rd Dec 2024	Winner
39	Soumyashree Bastia	Triple jump (University level)	National	21st,22nd, 23rd Dec 2024	3rd Position
40	Soumyashree Bastia	Chess (University level)	National	21st,22nd, 23rd Dec 2024	Runners up
41	Shriya Sunayna Nayak	Treasure Hunt (University level)	National	21st,22nd, 23rd Dec 2024	1st position
42	Ritu	Essay Writing (University level)	National	21st,22nd, 23rd Dec 2024	3rd Position
43	Addyasha Priyadarshini Nayak	Treasure Hunt (University level)	National	21st,22nd, 23rd Dec 2024	1st position
CAYm2 (2023-24)					
1	Abhay Panda	Smart India Hackathon 2023 (SIH-2023)	National	22nd – 23rd September 2023	Participation

2	Abhay Panda	MSME Idea Hackathon 4.0	National	2024	Top 30 Regional University Level Ideas (Forwarded to Delhi)
3	Abhay Panda	Project SOCH (G-20 ACIC GIET University Foundation)	National	Feb 2023 – Sept 2023	Participation
4	Abhay Panda	Rayagada District Level Food Processing Conclave 2024	National	19th July 2024	
5	Abhay Panda	Entrepreneurial Idea Pitch – GIETU IncubetX (Biotechnology Domain)	National	December 2024	
6	Abhay Panda	Academic-Entrepreneurial Ecosystem Roadshow	National	August 2024	
7	Abhay Panda	Precise Writing Competition & Debate – SHRUJAN 1.0	National	2023	2nd position
8	Abhay Panda	Tech Speak Triumph – SHRUJAN 2.0	National	2024	3rd position
9	Abhay Panda	Waste-to-Wealth Competition (University Level)	National	21st,22nd, 23rd Dec 2024	2nd position
10	Ipsita Mishra	Voice of BT" Inter collegiate public speaking contest on Biotechnology	National	2023	1st (Winner)
11	B Sakina Pratap	Gandhi jayanti	National	2023	3rd position

		celebration 2023 competition : QUIZ			
12	B Sakina Pratap	Chandrayaan mahotsav quiz	National	2023	2nd position
13	B Sakina Pratap	Independence day (Azadi ka Amrit Mahotsav) : Song	National	2023	1st position
14	B Sakina Pratap	Bio poem in Department Fest	National	2023	2nd position
15	Saloni Gardia	Bio poem in Department Fest	National	2023	1st position
16	Swadhin Panda	21days advance technical module training programs at Hyderabad	National	2023	
17	Swadhin Panda	Chatrapur Badminton Club competition	National	2023	Participation
18	Dharitree Palmal	Tug of War Branch Fest	National	2023	1st position
19	DOVELIN NAYAK	Tug of War Branch Fest	National	2023	1st position
20	Santosh Kumar Nayak	SARS CoV-2 Infection studies Webinar By Learngrade wet lab Championship	National	2023	
21	Rishu Upadhyay	Branch Fest: Cricket	National	2023	1st position
22	Prajukti Labala	Tug of War Branch Fest	National	2023	1st position
23	Anupam Behera	Debate Competition	National	2023	3rd position

		in Branch Fest			
24	Abhay Panda	Shrujan 1.0 GIET, University, Gunupur Precise writing	National	2023	2nd position
25	Abhay Panda	Poem in Branch fest 2023	National	2023	3rd position
CAYm3 (2022-23)					
1	Ipsita Mishra	Voice of BT" Inter collegiate public speaking contest on Biotechnology	National	2022	1st (Winner)
2	Goutam Jha	Molecular Docking Two days workshop organised by "Sathyabama Institute of science & Technology"	National	2022	Workshop certificate
3	Rozina Paikray	Biochemistry, Pathology & Microbiology Technique of 15 Days organised by "CSIR-Indian Institute of Chemical Biology	National	2022	Participation certificate
4	Deepak Samal	Biochemistry,	National	2022	Participation certificate

		Pathology & Microbiology Technique of 15 Days organised by "CSIR-Indian Institute of Chemical Biology			

(Abhay Panda completed a 5-day hands-on workshop on 3D/2D modelling, Design and Printing.)

Invopreuner pitching

(Amay Ranjan Mahapatra Completed the internship program on ELECTROCHEMICAL SENSING APLICATION.)

(Amaya Ranjan Mahapatra secured 2nd position in oral presentation on national science day)

(Ankit Meher Participated in Global Bio-India 2024)

Abhay Panda Participated IN DPSRU MEGA I
INNOVATION FESTIVAL AND HEALTH HACK ***s)***
5.0and secured 2nd position

(Abhay Panda secured 3rd position in painting During branch fest.)

(Abhay Panda compleed the NPTEL course on introduction to CELL BIOLOGY,8 week course)

(Abhay Panda Participated in ELEVATOR PITCH COMPETETION)

(Abhay Panda completed NPTEL course on INTRODUCTION TO BIOMIMICRY)

(Abhay panda Participated in the Health Awareness Quiz organized by UDAAN YUTH CLUB)

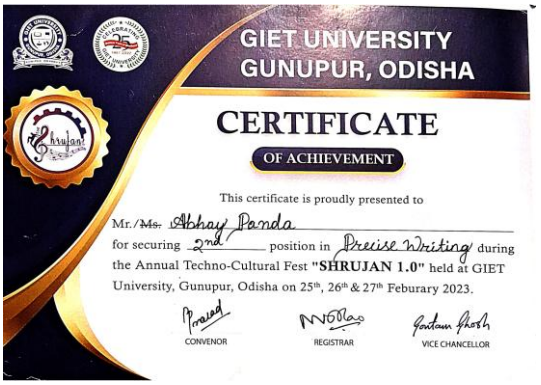
(Sriya Laxmi Dora Successfully completed the Internship program on ELECTROCHEMICAL SENSING APPLICATION at ALPHAION)

(Abhay Panda Secured 3rd position in Poem During Branch Fest)

(Archita Mishra participated in the ELVATOR PITCH COMPETITION - ELEVATE1.0)

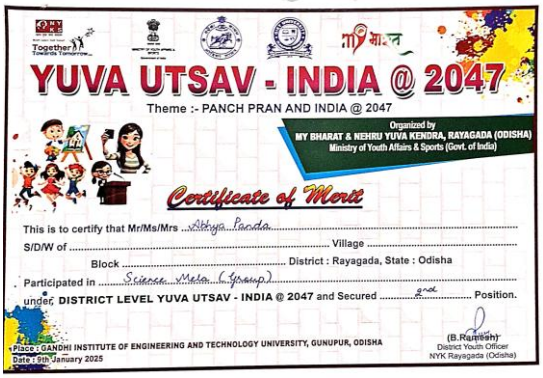
(Sriya Laxmi Dora Participated in the HACK FORGE 1.0 24hour hackathon)

Sriya Laxmi Dora Achieved 2nd position in the INNOVATIO CHALLENGE Dring UTKARSH ODISHA

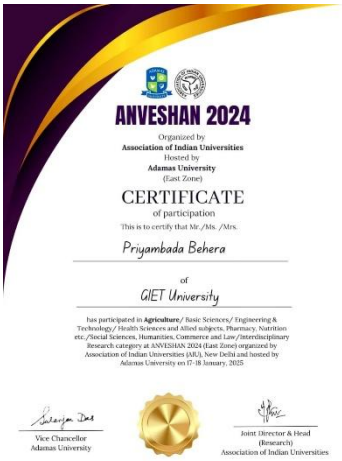


(Abhay Panda Secured 2nd position in precise Writing during the Annual Techno-Cultural Fest)

Abhay Panda achieved 2nd Position in the Innovation challenge during Utkarsh Odisha



(Abhay Panda Participated in SCIENCE MELA under, District Level YUVA UTSAV and secured 2nd position)


ANVESHAN 2024

Organized by
Association of Indian Universities
Hosted by
Adamas University
(East Zone)

CERTIFICATE
of participation

This is to certify that Mr./Ms. /Mrs.

Priyambada Behera

of

GIET University

has participated in Agriculture/ Basic Sciences/ Engineering & Technology/ Health Sciences and Allied subjects, Pharmacy, Nutrition etc./Social Sciences, Humanities, Commerce and Law/Interdisciplinary Research category at ANVESHAN 2024 (East Zone) organized by Association of Indian Universities (AIU), New Delhi and hosted by Adamas University on 17-18 January, 2025

Vice Chancellor
Adamas University

Joint Director & Head
(Research)
Association of Indian Universities

Priyambada Behera Participated in ANVESHAN 024


National Workshop
on
Raising Awareness on Urban Air Quality, Climate Change, Health and e-resilience
Sponsored by
Ministry of Science and Technology, Government of India
December 23, 2022

Certificate of Participation

This is to certify that Ms./ Mr./Dr. Abhay Panda has been awarded th Certificate of Participation in the National workshop on " Raising awareness on Urban Air Quality, Climate Change, Health and e-resilience" organized by Environmental Pollution Laboratory, Department of Environmental Studies, University of Delhi in collaboration with Department of Biotechnology, Gandhi Institute of Technology University (GIETU), Gunupur, Odisha.

Prof. Chirashree Ghosh
Convener and Organising Secretary

Dr. Ajay Padhi
Co-organizing Secretary

Dr. Manoja Das
Co-organizing Secretary

(Abhay Panda Participated in National workshop on Raising Awareness on Urban Air Quality , Climate change, health and e-resilience)


Azadi Ka Amrit Mahotsav

CERTIFICATE

OF APPRECIATION

This is to certify that B.Sakina Pratap, 2nd Year, B.Tech (Biotechnology) has participated in Song competition and stood First position on the occasion of Azadi Ka Amrit Mahotsav, 75th Independence Day conducted by GIET UNIVERSITY GUNUPUR.

Cultural Head
Giet University

Registrar
Giet University

(Sakina Pratap has participated in song competition stood first position on the occasion of AZADI KA AMRIT MAHOSTAV)


CERTIFICATE

Of Appreciation

This certificate is presented to

Ms./Mrs. B. Sakina Pratap

for securing 3rd position in Quiz competition on the occassion of "Gandhi jayanti Celebration 2023" conducted by GIET UNIVERSITY, GUNUPUR.

Registrar
GIET UNIVERSITY

Vice Chancellor
GIET UNIVERSITY

(Sakina Pratap for secured 3rd position in Quiz competition)


Certificate of Achievement

This certificate is proudly awarded to

B. Sakina Pratap

for securing 2nd position in Quiz competition on the occassion of "Chandrayan Mahotsav Celebration " conducted by GIET UNIVERSITY, GUNUPUR.

REGISTRAR
GIET UNIVERSITY

VICE CHANCELLOR
GIET UNIVERSITY


GIET UNIVERSITY

GUNUPUR, ODISHA

CERTIFICATE OF ACHIEVEMENT

This Certificate Is Proudly Presented To

Mr./Ms. Dinesh Tanty Roll No. 22BT033

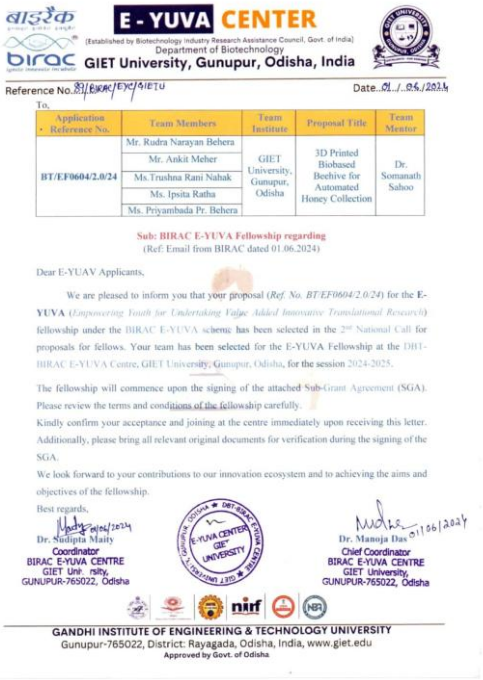
for securing Runners-up position in FOOTBALL during the Annual Techno-Cultural Fest: SHRUJAN 3.0 held at Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University) on 21st, 22nd & 23rd of December 2024.

CONVENER
SHRUJAN 3.0

REGISTRAR
GIET UNIVERSITY

(Sakina Pratap secured 2nd position in quiz competition on the occasion of CHANDRAYAN MAHOSTAV CELEBRATION)

(Dinesh Tanty Secured runner up position in Football during Annual techno cultural fest)



E-YUVA CENTER
(Established by Biotechnology Industry Research Assistance Council, Govt. of India)
Department of Biotechnology
GIET University, Gunupur, Odisha, India

Reference No. BT/EYC/E-YC/5/IETU Date: 01/06/2024

To,

Application Reference No.	Team Members	Team Institute	Proposal Title	Team Mentor
BT/EF0604/2.0/24	Mr. Rudra Narayan Behera Mr. Ankit Meher Ms.Trushna Rani Nahak Ms. Ipsita Ratha Ms. Priyambada Pr. Behera	GIET University, Gunupur, Odisha	3D Printed Biobased Beehive for Automated Honey Collection	Dr. Somanath Sahoo

Sub: BIRAC E-YUVA Fellowship regarding
(Ref: Email from BIRAC dated 01.06.2024)

Dear E-YUAV Applicants,

We are pleased to inform you that your proposal (*Ref. No. BT/EF0604/2.0/24*) for the **E-YUVA** (*Empowering Youth for Undertaking Value Added Innovative Translational Research*) fellowship under the BIRAC E-YUVA scheme has been selected in the 2nd National Call for proposals for fellows. Your team has been selected for the E-YUVA Fellowship at the DBT-BIRAC E-YUVA Centre, GIET University, Gunupur, Odisha, for the session 2024-2025.

The fellowship will commence upon the signing of the attached Sub-Grant Agreement (SGA). Please review the terms and conditions of the fellowship carefully.

Kindly confirm your acceptance and joining at the centre immediately upon receiving this letter. Additionally, please bring all relevant original documents for verification during the signing of the SGA.

We look forward to your contributions to our innovation ecosystem and to achieving the aims and objectives of the fellowship.

Best regards,

Dr. Sudipta Maity
Coordinator
BIRAC E-YUVA CENTRE
GIET Univ. rsity,
GUNUPUR-765022, Odisha

Dr. Manoja Das 01/06/2024
Chief Coordinator
BIRAC E-YUVA CENTRE
GIET University,
GUNUPUR-765022, Odisha

GANDHI INSTITUTE OF ENGINEERING & TECHNOLOGY UNIVERSITY
Gunupur-765022, District: Rayagada, Odisha, India, www.giet.edu
Approved by Govt. of Odisha

CERTIFICATE
OF COMPLETION
This certificate is presented to
Mr. Rudra Narayan Behera
for successfully completing a 5-day intensive hands-on workshop on 3D/2D Modeling, Design, and Printing, titled '**Master the Art of Design with SolidWorks**', sponsored under BIRAC E-YUVA program, at BIRAC E-YUVA Centre, GIET University, Gunupur, Odisha from February 21 to 25, 2025.

Dr. Manoja Das
Chief Coordinator,
BIRAC E-YUVA Centre
GIET UNIVERSITY

Dr. N. V.J. Rao
Registrar
GIET UNIVERSITY

Mr. Saikat Ghosh
Co-Founder & Director
Alphaion

GANDHI INSTITUTE OF ENGINEERING & TECHNOLOGY UNIVERSITY
Gunupur-765022, District: Rayagada, Odisha, India
Approved by Govt. of Odisha

www.giet.edu

(Rudra Narayan Behera completed 5day internship on 3D/2D modelling)

(Received Project grand of 2.5 lakhs from DBT-BIRAC)

GIET UNIVERSITY
GUNUPUR, ODISHA
CERTIFICATE OF ACHIEVEMENT
This Certificate Is Proudly Presented To

Mr./Ms. Soumyashree Bastia Roll No. 23BTa36
for securing Runners up position in Chess (Girls) during the Annual Techno-Cultural Fest: **SHRUJAN 3.0** held at Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University) on 21st, 22nd & 23rd of December 2024.

CONVENER
SHRUJAN 3.0

REGISTRAR
GIET UNIVERSITY

CERTIFICATE
OF APPRECIATION
Proudly Presented To

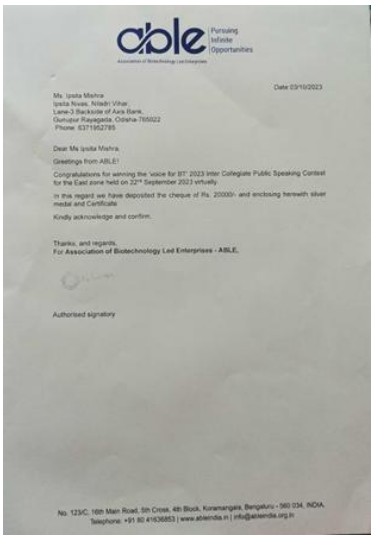
Ms. Sakuia Pratap
For securing 2nd position in Bio-poem during the Branch Fest, "KARY-ON 2K22" organized by Department of Biotechnology and Life Science held at GIET University, Gunupur on 6th & 7th november 2022

Dr.Diptikanta Acharya
ADVISOR, KARY-ON 2K22

Dr. Manoja Das
HOD ,Dept. of Biotechnology

Dr. N.V.J Rao
Registrar

(Soumyasree bastia Secured runner up position in CHESS during annual cultural fest)



Ms. Ipsita Mishra
Ipsita Niwas, Niladri Vihar,
Lane-3 Backside of Axis Bank,
Gunupur Rayagada, Odisha-765022
Phone: 6371952785

Date 03/10/2023

Dear Ms Ipsita Mishra,

Greetings from ABLE!

Congratulations for winning the 'voice for BT' 2023 Inter Collegiate Public Speaking Contest for the East zone held on 22nd September 2023 virtually.

In this regard we have deposited the cheque of Rs. 20000/- and enclosing herewith silver medal and Certificate

Kindly acknowledge and confirm.

Thanks, and regards,
For Association of Biotechnology Led Enterprises - ABLE,

Authorised signatory

No. 123/C, 16th Main Road, 5th Cross, 4th Block, Koramangala, Bengaluru - 560 034, INDIA.
Telephone: +91 80 41636853 | www.ableindia.in | info@ableindia.org.in

Sl.No.STM 03/25

alphaion

#startupindia Startup Odisha

CERTIFICATE OF INTERNSHIP

This is to certify that

Mr. Abhay Panda

has successfully completed the internship program on ELECTROCHEMICAL SENSING APPLICATION *at Alphaion during the period of* 1st February 2025 to 31st March 2025.

Head R&D
Sichem Techno Health Private Limited.

AWARD

Director
Sichem Techno Health Private Limited.

Issued by:

(Sakina pratap secured 2nd position in BIO-POEM during Branch Fest)

(Abhay Panda successfully completed internship program on ELECTROCHEMICAL SENSING APPLICATION)

IPSITA MISHRA VOICE BT

IPSITA MISHRA VOICE BT

4.7.3 Publication of Journals Magazines, Newsletters, etc. in the Department (05)

(Provide details of journals, magazines, newsletters, etc., published by the department, along with the names of the editors, issue numbers, volume numbers, and a list of students involved for the past 3 years.)

Table No. 4.7.3.1: List of students involved in publication of journals, magazines, and newsletters, etc. in the Department.

S.N.	Name of the Journal, Magazine, Newsletter	Name of the Editor	Name of the Student & Semester	No. of Issues	Hard copy/ Soft copy
CAYm1 (2024-25)					
1	Biotech News letter	HoD, Dept.of Biotech	1. Swapnil Swain, 8th semester 2. Swadhin Panda, 8th semester 3. Pujarani Barik, 6th semester 4. Abhaya Panda, 6th semester	Three issues per year	Soft copy
…					
CAYm2 (2023-24)					
1	Biotech News letter	HoD, Dept.of Biotech	1. Ipsita Mishra, 8th semester 2. Goutam Jha, 8th semester 3. Swapnil Swain, 6th semester 4. Swadhin Panda, 6th	Three issues per year	Soft copy
…					
CAYm3 (2022-23)					
1	Biotech News letter	HoD, Dept.of Biotech	1. Sai sristi Panda, 8th semester 2. Sonali Patro, 8th semester 3. Ipsita Mishra, 6th semester	Three issues per year	Soft copy

			4. Goutam Jha, 6th semester		

About the Wall Magazine

Biocans – Wall of Honor is the official monthly wall magazine of the **Department of Biotechnology, GIET University, Gunupur Odisha r**ooted in the spirit of *"BIOCANS"*. It symbolizes transformation, innovation, and the continuous quest for knowledge-values at the core of Biotechnology.

This wall magazine is designed exclusively for the students and faculty of the department, serving as a creative and informative platform to share, celebrate, and inspire.

Purpose and Vision

The wall magazine serves as a dynamic platform to:

- Highlight student and faculty achievements in academics, research, and extracurricular activities.
- Foster creativity through articles, artwork, and design contributions.
- Encourage collaboration and community spirit within the department.
- Provide updates on departmental events, seminars, and initiatives.

Features

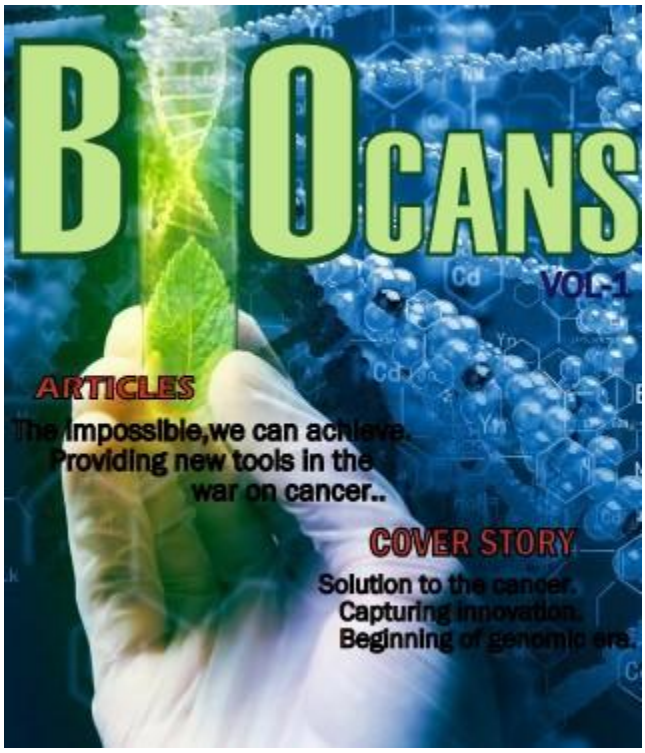
BIOCANS – Wall of Honor typically includes:

- Profiles of distinguished alumni and faculty members.
- Student-written articles on recent advancements in Biotechnology.
- Creative pieces like poems, sketches, and photographs.
- Information on upcoming events, workshops, and conferences

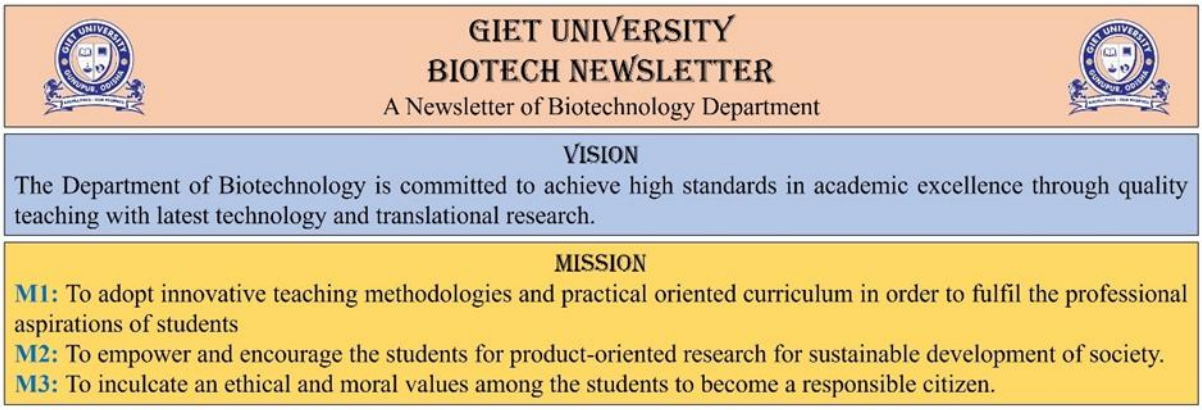
Contribution and Participation

All members of the department are encouraged to contribute to the magazine. Submissions can range from technical articles and research summaries to creative works and event reports. A dedicated editorial team curates the content to ensure quality and relevance.

BIOCANS – Wall of Honor is more than just a display; it's a testament to the department's commitment to excellence, creativity, and community engagement.



Biocans: Monthly wall magazine


GIET UNIVERSITY
BIOTECH NEWSLETTER
A Newsletter of Biotechnology Department

VISION

The Department of Biotechnology is committed to achieve high standards in academic excellence through quality teaching with latest technology and translational research.

MISSION

M1: To adopt innovative teaching methodologies and practical oriented curriculum in order to fulfil the professional aspirations of students
M2: To empower and encourage the students for product-oriented research for sustainable development of society.
M3: To inculcate an ethical and moral values among the students to become a responsible citizen.

(Trimonthly published Biotechnology newsletter)

4.7.4 Student Publications (05)

S.N.	Name of the Student & Semester	Name of the Publisher	Name of the Journal/ Conference, etc.	Volume No. & Issue No.	Name of the Award if any
CAYm1(2024-25)					
1	**Rakesh Rout**	**Elsevier**	**Biogenic Nanoparticles**	**Edition: 1 ISBN: 9780443338205**	**Published on April 11, 2025**
CAYm2(2023-24)					
1	**Goutam Jha**	**Springer**	**Recent Advancement of Computational Approach.**	**https://doi.org/10.1007/978-981-97-9634-2_10** **Book chapter**	**Published on 13 Dec 2024**
CAYm3(2022-23)					
1	**Ashma Parveen**	**IABP**	**Journal of Biopesticides**	**14 (1), 27-31**	**Published**

Criterion 5: Faculty Information (100)

Table No. 5A: Faculty details

S.N.	Name of the Faculty	PAN No.	APAAR faculty ID*(if any)	Highest degree	University	Area of Specialization	Date of Joining in this Institution	Experience in years in current institute	Designation at Time Joining in this Institution	Present Designation	The date on which Designated as Professor/ Associate Professor if any	Nature of Association (Regular/ Contract/ Ad hoc)	If contractual mention Full time or (Part time or hourly based)	Currently Associated (Y/N)	Date of Leaving if any (In case Currently Associated is "No")
1	Dr. Manoja Das	ANDPD8648R		M.Tech, Ph.D	Berhampur University	Plant Biotechnology	01-07-2004	20.7	Assistant Professor	Professor	01.07.2020	Regular		Y	No
2	Dr. Durga Prasad Pattanaik	AZVPP6647C		Ph.D	Berhampur University	Environmental Biotechnology	03.07.2023	2	Professor	Professor	03.07.2023	Regular		Y	No
3	Dr. Anil Kumar Palo	AYQPP1286R		Ph.D	Berhampur University	Cell Biology	01.08.2024	1	Professor	Professor	01.08.2024	Regular		Y	No
4	Dr. Diptikanta Acharya	AMHPA4743M		M.Tech, Ph.D	Berhampur University	Molecular Biology and Genetic Engg.	20.03.2006	19	Assistant Professor	Associate Professor	01.07.2022	Regular		Y	No
5	Dr. B. Rabi Prasad	APYPB1541C		M.Tech, Ph.D	GIET University	Immunology and Immunotechnology	23.03.2006	19	Assistant Professor	Associate Professor	01.07.2024	Regular		Y	No
6	Dr. Y Aparna	AQQPY7223F		Ph.D, Post Doc	GITAM University	Animal Biotechnology	01.07.2022	3	Associate Professor	Associate Professor	01.07.2022	Regular		Y	No

7	Mrs. Sagarika Satapathy	DGEPS0783P		M.Tech. (Ph.D)	BPUT	Microbiology	26.02.2007	18	Assistant Professor	Assistant Professor		Regular		Y	No
8	Dr. Nirmal Chandra Biswal	ANMPB7972K		Ph.D	Utkal University	Animal Biotechnology	01.04.2020	5	Assistant Professor	Assistant Professor		Regular		Y	No
9	Ms. Ghanishtha Prusty	DECPP1712K		M.Tech, (Ph.D)	GIET University	Cytogenetics	25.11.2021	4	Assistant Professor	Assistant Professor		Regular		Y	No
10	Dr. Sudipta Maity	CFOPM0953H		Ph.D	OUAT	Industrial Microbiology	04-01-2022	3.5	Assistant Professor	Assistant Professor		Regular		Y	No
11	Dr. Chitta Ranjan Sahoo	CUQPS5381E		Ph.D	SOA University	Bioinformatics	10.08.2022	3	Assistant Professor	Assistant Professor		Regular		Y	No
12	Dr. Namita Panigrahy	GCHPP8553A		Ph.D	SOA University	Biomaterial	08.12.2022	3	Assistant Professor	Assistant Professor		Regular		Y	No
13	Mr. Sambhu Prasad Babu	BXYPB0126N		M.Tech	GIET University	Bioprocess Technology	25.07.2022	2.5	Assistant Professor	Assistant Professor		Regular		Y	No
14	Dr. Swastik Behera	DSLPB2062M		Ph.D	JNU, New Delhi	Biochemistry	04.07.2024	1	Assistant Professor	Assistant Professor		Regular		Y	No
15	Ms. Anwesa Jena	CLMPJ9582K		M.Tech	GIET University	Bioprocess Technology	02.08.2024	1	Assistant Professor	Assistant Professor		Regular		Y	No
16	Ms. Soumyashree Rath	GCCPR5978E		M.Tech	GIET University	Bioinstrumentation	02.08.2024	1	Assistant Professor	Assistant Professor		Regular		Y	No
17	Dr. Pardhasaradhi Mathi	ARTPM1169N		Ph.D	K L University	Animal Biotechnology	01.04.2019	5	Associate Professor	Associate Professor	01.04.2019	Regular		N	30.10.2024
18	Dr. Polaki Suman	DQHPP5849E		Ph.D	Andhra University	Protein Engineering	02.02.2022	2	Assistant Professor	Assistant Professor		Regular		N	30.04.2024

5.1. Student-Faculty Ratio (30)

Table 5.1.1: Number of students admitted in the program

Academic Year	Year of Study	No. of students admitted in 1st year	Leftover seats/Unfilled seats in 1st year	No. of actually students admitted in 2nd year, L= a+ b; a=Lateral entry admission (maximum 10% of SA) b=Leftover seats admitted in 2nd year	No. of students in the program to be considered for SFR calculation (ST)= (SA + L) limited to 110 % of SA
CAY	2nd Year	56	04	0	56
	3rd Year	60	00	2	62
	4th Year	51	09	1	52
CAYm1	2nd Year	60	00	2	62
	3rd Year	51	09	1	52
	4th Year	30	00	0	30
CAYm2	2nd Year	51	09	1	52
	3rd Year	30	00	0	30
	4th Year	27	03	0	27

Table 5.1.2: Student-faculty ratio

Student	CAY	CAYm1	CAYm2
UG. B (Number of students in 2nd year)	56	62	52
UG. C (Number of students in 3rd year)	62	52	30
UG. D (Number of students in 4th year)	52	30	27

UG **(UG-Engineering Biotechnology)**	170	144	109
PG. A (Number of students in 1st year)	18	18	18
PG. B (Number of students in 2nd year)	18	18	18
PG **(M.Tech.-BT)**	**36**	**36**	**36**
DS=Total no. of students in all UG and PG programs in the Department	206	180	145
AS=Total no. of students of all UG and PG programs in allied departments	0	0	0
S=Total no. of students in the Department (DS) and allied departments (AS)	206	180	145
DF=Total no. of faculty members in the Department	16	14	12
AF= Total no. of faculty members in the allied Departments	0	0	0
F=Total no. of faculty members in the Department (DF) and allied Departments (AF)	16	14	12
FF=The faculty members in F who have a 100% teaching load in the first-year courses	1	1	1
Student Faculty Ratio (SFR)=S/(F-FF)	13.73	13.85	13.18

Average SFR for 3 years	13.59 = 14

5.2. Faculty Qualification (25) =

Faculty qualification index (FQI) = 2.5 * [(10X +4Y)/RF] where

- **X=No. of faculty members with Ph.D. degree** or equivalent as per AICTE/UGC norms.
- **Y=No. of faculty members with M. Tech**. or ME degree or equivalent as per AICTE/ UGC norms.
- RF=No. of required faculty in the Department including allied Departments to adhere to the 20:1 Student-Faculty ratio, with calculations based on both student numbers and faculty requirements as per section 5.1 of SAR; (RF=S/20).

Table No.5.2.1: Faculty qualification

Year	X	Y	RF	FQI= 2.5 * [(10X +4Y)/RF]
CAY	11	5	10.30	31.55
CAYm1	11	3	9.00	33.89
CAYm2	8	4	7.25	33.10
Average Assessment				**32.85**

5.3. Faculty Cadre Proportion (25)

Table No.5.3.1: Faculty cadre proportion details.

Year	Professors	Associate Professors	Assistant Professors

	Required Faculty(RF1)	Available Faculty(AF1)	Required Faculty(RF2)	Available Faculty(AF2)	Required Faculty(RF3)	Available Faculty(AF3)
CAY	1	3	2	3	7	10
CAYm1	1	2	2	3	6	9
CAYm2	1	1	2	3	5	8
Average Numbers	1	2	2	3	6	9

Faculty Cadre Proportion Marks = {[AF1/RF1] + [(AF2/RF2) × 0.6] + [(AF3/RF3) × 0.4]} × 12.5

= {[2/1] + [(3/2) × 0.6] + [(9/6) × 0.4]} × 12.5

= {[2] + [0.9] + [0.6]} × 12.5

= 3.5 × 12.5

= 43.75

5.4. Visiting/Adjunct Faculty/Professor of Practice (10)

Table No. 5.4.1: List of visiting/adjunct faculty/professor of practice and their teaching and practical loads.

S.N.	Name of the Person	Designation & Organization	Name of the Course	No. of hours handled
CAYm1				
1	Subhrajeet Singha Roy	CEO, Alphaion, Bhubaneswar, OD	Bioreactor Design and Analysis	26

2	Dr. Sudip Kumar Sen	Senior Manager R&D, Aquaconnect, Chennai, TN	Industrial microbiology	28
			Total no. of hours:	**54**
CAYm2				
1	Subhrajeet Singha Roy	CEO, Alphaion, Bhubaneswar, OD	Bioreactor Design and Analysis	26
2	Dr. Sudip Kumar Sen	Senior Manager R&D, Aquaconnect, Chennai, TN	Industrial microbiology	26
			Total no. of hours:	**52**
CAYm3				
1	Subhrajeet Singha Roy	CEO, Alphaion, Bhubaneswar, OD	Bioreactor Design and Analysis	26
2	Dr. Sudip Kumar Sen	Senior Manager R&D, Aquaconnect, Chennai, TN	Industrial microbiology	24
			Total no. of hours:	**50**

5.5. Faculty Retention (10)

Table No.5.5.1: Faculty retention ratio

Item	CAYm1	CAYm2	CAYm3
RF=No. of required faculty in the Department including allied Departments to adhere to the 20:1 Student-Faculty ratio, with calculations based on both student numbers and faculty requirements as per section 5.1 of SAR; (RF=S/20).	**10**	**9**	**7**
AF=The no. of available faculty members in the Department including allied Departments	**16**	**14**	**12**
A= The no. of faculty members at the current institute with less than 1 year of experience (A in AF)	**0**	**0**	**0**
B= The no. of faculty members at the current institute with more than 1 year and less than 2 years of experience (B in AF)	**4**	**2**	**5**
C= The no. of faculty members at the current institute with more than 2 years and less than 3 years of experience (C in AF)	**2**	**5**	**1**
D= The no. of faculty members at the current institute with more than 3 years and less than 4 years of experience (D in AF)	**4**	**1**	**1**
E= The no. of faculty members at the current institute with more than 4 years of experience (E in AF)	**6**	**6**	**5**
FR=(((A*0) + (B*1) + (C*2) + (D*3) + (E*4))/RF) *2.50 (points limited to 10)	**10.68**	**10.32**	**10.34**
Average FR= ((FR_1+ FR_2+ FR_3)/3) (marks limited to 10)	**10.45**		

Criterion 6: Faculty Contribution (120)

6.1. Professional Development Activities (60)

6.1.1. Memberships in Profession Societies at National/International Levels (05)

Table No. 6.1.1.1: List of faculty members and their memberships

S.N.	Name of the Faculty	Name of the Professional Society /Body at National and International Level	Name of the Grade/ Level/Position
1	Dr Manoja Das	• Indian Society of technical Education • Computer society of India • Institution of Engineer • Microbiology society of India	• Life Member • Life Member • Life Member • Life Member
2	Dr Diptikanta Acharya	• Indian Society of technical Education • Computer society of India • Institution of Engineer • Microbiology Society of India • Life member of environmental Engineers	• Life Member • Life Member • Life Member • Life Member • Life Member
3	Dr B. Rabi Prasad	• Indian Society of technical Education • Computer society of India • Institution of Engineer • Microbiology Society of India	• Life Member • Life Member • Life Member • Life Member
4	Mr Sagarika Satapathy	• Indian Society of technical Education • Computer society of India • Institution of Engineer • Microbiology Society of India	• Life Member • Life Member • Life Member • Life Member
5	Ms Ghanishtha Prusty	• Indian Society of technical Education • Microbiology society of India	• Life Member • Life Member
6	Dr Namita Panigrahy	• Indian Society of Technical Education	• Life Member

7	Dr. Durga Prasad Pattanaik	• Institution of Engineer	• Associate Member
8	Dr. Anil Kumar Palo	• Indian Botanical Society	• Life Member
9	Dr. Swastik Behera	• Indian Peptide Society	• Life Member
10	Dr. Y Aparna	• Institution of Engineer • Microbiology society of India	• Life Member • Life Member
11	Dr.Chitta Ranjan Sahoo	• Indian Society of technical Education • Institution of Engineer • Microbiology society of India	• Life Member • Life Member • Life Member
12	Dr. Sudipta Maity	• Electron Microscopic Society, India • Indian Association for Cancer Research	• Life Member • Life Member
13	Ms. Anwesa Jena	• Microbiology society of India	• Microbiology society of India
14	Mr. Sambhu Prasad Babu	• Institution of Engineer • Microbiology society of India	• Life Member • Life Member
15	Ms. Soumyashree Rath	• Indian Botanical Society	• Life Member
16	Dr. Nirmal Chandra Biswal	• Microbiology society of India	• Life Member

6.1.2. Faculty as Resource Persons or Participants in STTPs/FDPs (10)

6.1.2.1. Faculty as Resource Persons in STTPs/FDPs (05)

Table No. 6.1.2.1.1: List of faculty members as resource person in STTP/FDP events

S.N.	Name of the Faculty as Resource Person	Name of the STTP/FDP	Date	Location	Organized by
CAYm1(23-24)					
1	Dr. Manoja Das	Design Thinking and Innovation	23.10.2024-27.10.2024	Bhubaneswar	School of Humanities, Social Sciences, and Management.
2	Dr. Durga Prasad Pattanaik	Strategies and methodologies for academic assessment.	29.11.2024	Patna	Chandragupt Institute of Management Patna
CAYm2 (22-23)					
1	Dr. Manoja Das	Innovative teaching methods and research contributions aimed at societal welfare.	26.06.2023-01-07-2023	Bhubaneswar	KIIT Deemed-to-be-University
2	Dr. Diptikanta Acharya	Artificial Intelligence and Big Data Analysis using Python	16.10.2023-21.10.2023	Berhampur	Berhampur University

3	Dr B Rabi Prasad	Recent trends in Biotechnology	01.11.2023-05.11.2023	Visakhapatnam	PS PG College
CAYm3 (21-22)					
1	Dr. Pardhasaradhi Mathi	Large Language Models in Artificial Intelligence	October 4–7, 2023	Andhra Pradesh	Andhra Pradesh Information Technology Academy
2	Mr. Sambhu Prasad Babu	Six-Day Faculty Empowerment Programme on Environmental Science and Sustainability	February 13–18, 2023	Chennai	Department of Chemistry, CEG Campus, Anna University, Chennai

6.1.2.2. Faculty Members' Participation in STTPs/FDPs (05)

Table No. 6.1.2.2.1: List of faculty members participated in STTP/FDP events.

S.N.	**Name of the Faculty as Resource Person or Participant**	**Max. 5 per Faculty**		
		CAYm1	**CAYm2**	**CAYm3**
1	Dr. Diptikanta Acharya	5	3	4
2	Mrs Sagarika Sathpathy	4	4	4
3	Dr. Manoja Das	4	4	5
4	Dr. B. Rabi Prasad	4	3	4
5	Dr. Namita Panigrahy	3	4	4
6	Dr. Y Aparna	5	5	

7	Dr. Sudipta Maity	2	3	1
8	Dr. Swastik Behera	2	2	3
9	Dr. Polaki Suman		2	3
10	Dr. Nirmal Chandra Biswal	2	1	3
11	Ms. Ghanishtha Prusty	2	3	
12	Ms. Anwesa Jena		3	4
13	Mr. Sambhu Prasad Babu	3	5	3
14	Ms. Soumyashree Rath		4	3
15	Dr. Chitta Ranjan Sahoo	4	5	5
16	Dr. Durga Prasad Pattanaik	3	2	3
17	Dr. Anil Kumar Palo	4	3	4
Sum		61	73	61
RDF = Number of faculty required to comply with the 20:1 student-faculty ratio in the Department alone, as per section 5.1 of SAR (RDF=DS/20).		14.60	14.54	14.27
Assessment Points (AP) = (Sum / (0.5* RDF)) (Points limited to 5 for each assessment year)		8.3	10.04	8.54
Average assessment points over 3 years = ((AP_1+AP_2+AP_3)/3) (Markslimitedto5overtheassessmentperiod)		**8.96**		

6.1.3. Faculty Contribution in Development of SWAYAM MOOCs and other E-Content (05)

Table No. 6.1.3.1: List of faculty members developed MOOC course for the past 3 years.

S.N.	Name of the Faculty	Name of the Course Developed and available online on Swayam platform by your Department's faculty
1	Dr. Manoja Das	Plant Biotechnology
2	Dr. Durga Prasad Pattanaik	Environmental Biotechnology
3	Dr. Anil Kumar Palo	Cell Biology

6.1.4. Faculty Certification of MOOCs through SWAYAM, etc. (10)

Table No. 6.1.4.1: List of faculty members obtained certification of MOOCs for the past 3 years.

S.N.	Name of the Faculty	Name of Course Passed	Course Offered by (agency)	Grade obtained if any
1	Dr. Manoja Das	Introduction to Biostatistics	NPTEL / IIT Guwahati	Elite
2	Dr. B. Rabi Prasad	Immunology	NPTEL / IIT Kharagpur	Elite + Silver
3	Dr. Sudipta Maity	Basics of Cell Biology	NPTEL / IIT Madras	Elite
4	Dr. Swastik Behera	Introduction to Developmental Biology	NPTEL / IIT Madras	Elite
5	Mrs. Sagarika Satapathy	Environmental Biotechnology	NPTEL / IIT Roorkee	Elite
6	Dr. Namita Panigrahy	Industrial Biotechnology	NPTEL online certification	Elite
7	Dr. Y Aparna	Experimental Biotechnology		Successfully Completed
8	Dr. Polaki Suman	Bioinformatics: Algorithms and Applications	NPTEL online certification	Successfully Completed

9	Dr. Nirmal Chandra Biswal	Introduction to Proteomics	NPTEL / IIT Bombay	Successfully Completed
10	Ms. Ghanishtha Prusty	Introduction to Developmental Biology	NPTEL online certification	Elite
11	Ms. Anwesa Jena	Cell Culture Technologies in Animal and Plants	NPTEL / IIT Kanpur	Successfully Completed
12	Mr. Sambhu Prasad Babu	Downstream Processing in Biochemical Engineering	NPTEL / IIT Delhi	Successfully Completed
13	Ms. Soumyashree Rath	Genetic Engineering: Theory and Application	NPTEL / IIT Madras	Successfully Completed
14	Dr. Chitta Ranjan Sahoo	Principles of Downstream Techniques in Biotech	NPTEL / IIT Kharagpur	Elite + Silver

6.1.5. FDP/STTP Organized by the Department (10)

Table No. 6.1.5.1: List of FDPs/STPs organized by Department for the past 3 years.

S.N.	**Name of the Program**	**Date of the Program**	**Duration of the Program**	**Name of the Speaker & Designation and Organization**	**No. of People Attended**
CAYm1					
1	FDP on Research Methodology in Biotechnology	5–9 February 2024	5 Days	Dr. Kavita R., Research Consultant, CSIR	50

2	STP on Industrial Biotechnology and Fermentation Technology	6–8 March 2024	3 Days	Dr. Dinesh Rao, Director, Biocon Academy	41
CAYm2					
1	FDP on Applications of Biotechnology in Sustainable Agriculture	24–28 July 2023	5 Days	Dr. Priya Nanda, Professor, TNAU Coimbatore	49
2	STP on Recombinant DNA Technology and Applications	10–12 March 2023	3 Days	Dr. S. Narayanan, Senior Scientist, CCMB Hyderabad	38
CAYm3					
1	FDP on Recent Trends in Genetic Engineering	15–19 March 2022	5 Days	Dr. Anjali Sharma, Professor, Dept. of Biotech, IIT Madras	52
2	FDP on Biostatistics and Data Analysis using R in Life Sciences	5–9 December 2022	5 Days	Dr. Meenakshi Iyer, Associate Professor, Dept. of Biostatistics, BHU	46

6.1.6. Faculty Support in Student Innovative Projects (10)

Table No. 6.1.6.1: List of faculty members involved in student innovative projects.

S.N.	Name of the Faculty	Name of the Event	Date of Event	Place of Event	Website Link if any
CAYm1					

1	Mrs Sagarika Sathpathy	Women in Science & Innovation Hackathon	8 March 2024	IIIT Bhubaneswar	No
2	Dr. Namita Panigrahy	HackBio 2024	19–21 February 2024	BITS Pilani Hyderabad	No
3	Dr. B. Rabi Prasad	Shrujan 2.0	10th to 12th February, 2024	GIET University, Gunupur	https://www.giet.edu/events/shrujan-2-0/
4	Dr. Swastik Behera	BIRAC E-YUVA Fellowship	23rd April 2024	DBT-BIRAC EYC, GIET University	https://www.birac.nic.in/e_yuva.php
CAYm2					
1	Dr. Y Aparna	AI for Bioinformatics Hackathon	10–12 May 2023	AIIMS Delhi	NO
2	Dr. B. Rabi Prasad	Bio-Innovation Challenge (BIC)	15–17 July 2023	VIT Vellore	No
3	Dr. Diptikant Acharya	BIRAC E-YUVA Fellowship	23rd May 2022	DBT-BIRAC EYC, GIET University	https://www.birac.nic.in/e_yuva.php
CAYm3					
1	Dr. Namita Panigrahy	Young Innovators Ideathon	9–10 January 2021	SOA University, Bhubaneswar	No
2	Dr. Sudipta Maity	Ideathon on Bio-Based Startups	15 March 2021	BioNEST (ILS, Bhubaneswar)	No

6.1.7. Faculty Internship/Training/Collaboration with Industry (10)

S.N.	Name of the Faculty	Name of the Internship/ Training/ Collaboration	Name of the Company & Place	Duration	Outcomes of Internship/ Training/ Collaboration
1	Dr. Manoja Das	Training on Bio-Agri Product Development	UPL Ltd, Gujarat	1 Month (May 2023)	Developed MoU for student projects; initiated incubation program in agri-biotech
2	Dr. Durga Prasad Pattanaik	Industrial Exposure on Vaccine Manufacturing	Bharat Biotech, Hyderabad	10 Days (Feb 2024)	Developed industry case module; planned joint training for students
3	Dr. Anil Kumar Palo	Training in Environmental Biotechnology	TERI, New Delhi	15 Days (July 2023)	Collaborative student research project initiated on bioremediation
4	Dr. Diptikant	Industrial Fermentation and	Syngene Internation	1 Month (June 2022)	Initiated student internship

	a Acharya	Scale-Up Techniques	al, Bangalore		program; upgraded lab protocols for fermentation projects
5	Dr. B. Rabi Prasad	Advanced Molecular Diagnostics Training	Biocon Academy, Bangalore	3 Weeks (May 2022)	Hands-on experience in molecular diagnostics; incorporated into M.Sc. curriculum
6	Dr. Sudipta Maity	I-INCUBATE	GDC-IIT Madras	18 Weeks (December2024)	Bioentrepreneurship & Idea Generation and Market Validation

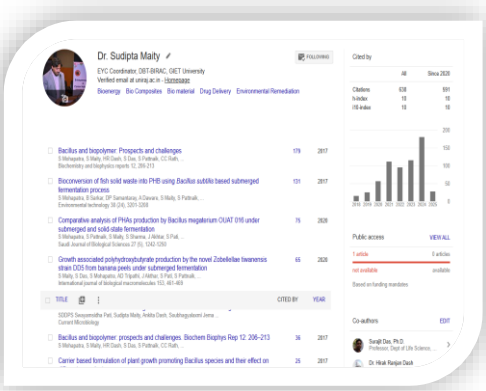
6.2. Research and Development Activities (60)

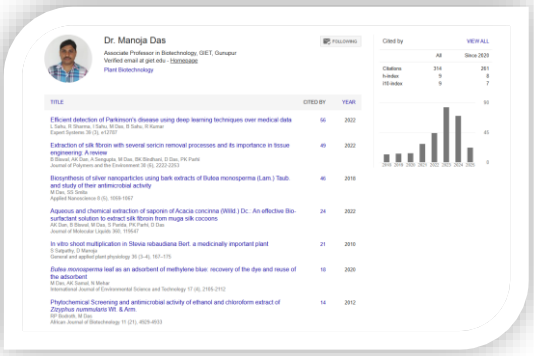
6.2.1. Academic Research (10)

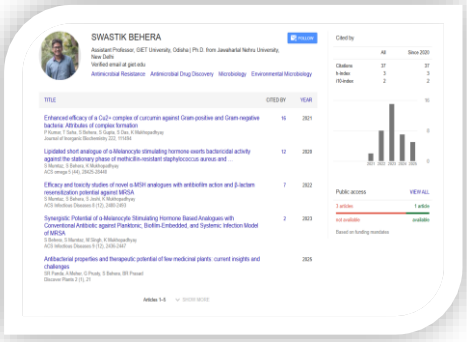
Table No. 6.2.1.1: Faculty publication details.

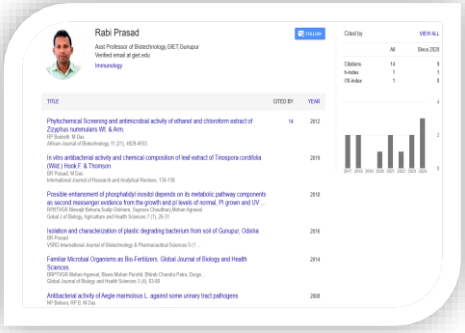
S.N.	Item	CAYm1	CAYm2	CAYm3
1	No. of peer reviewed journal papers published	**23**	**19**	**10**
2	No. of peer reviewed conference papers published	**10**	**09**	**09**
3	No. of books/book chapters published	**11**	**01**	**02**

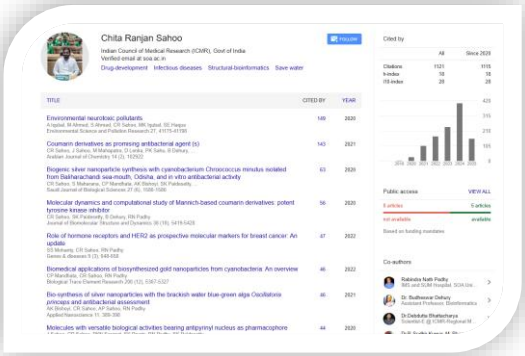
Fig.6.2.1.: Google scholar details of Faculty











6.2.2. Ph.D. Student Details (05)

Table No. 6.2.2.1: Ph.D. details.

S.N.	Item	CAYm1	CAYm2	CAYm3
1	No. of students enrolled for Ph.D. in the Department	10	8	6

2	No. of Ph.D. students graduated in the Department	1	0	0

6.2.3. Development Activities (10)

Sl. No.	Patent application number	Title	Year	Status	Name of the Inventors
1	202431041533	A formulation of Biopesticide to control fungal disease in crop plant	2024	Published Date 07.06.2024	Dr. Manoja Das
2	202331062736-20.10.2023	An antiviral herbal formulation for animal virus	2024	Applied	Dr. Manoja Das
3	389205-011/28.06.2023	Solar power bore well water purification system	2023	13.11.2023	Dr. D K Acharya
4	202331062736-20.10.2023	An antiviral herbal formulation for animal virus	2023	Awaited	Dr. Manoja Das
5	202431049820 A	A Method For Producing A Food Supplement From Microalgae For Elderly And Icu Patients	2024	Published Date 05.07.2024	Dr. Sudipta Maity
6	L-145453/2024	Electronic Health Record System (EHRS) for facilitating timely and effective health care delivery	2024	Published Date :21/03/2024	Dr. Sudipta Maity

6.2.4. Sponsored Research Project (15)

Table No. 6.2.4.1: List of sponsored research projects received from external agencies.

S.N.	PI name	Co-PI names if any	Name of the Dept., where project is sanctioned	Project title*	Name of the Funding agency	Duration of the project	Amount (Lacs)
CAYm1							
1	Dr. Manoja Das		Department of Biotechnology	BIRAC EYUVA Project	BIRAC	2021-2023 (Extended)	48.00
2	Dr. Swastik Behera		DBT-BIRAC	3D Printed Biobased Beehive for Automated Honey Collection	BIRAC	2024-2025	2.5
Amount received (Rs.)							50.5
CAYm2							
1	Dr. Sudipta Maity		Department of Biotechnology	Biomarker linked noninvasive portable diagnostic device for Oral Cancer	MSME, Govt. of India (IDEAOD0082 00)	1 year	15.0

2	Dr. Sudipta Maity		Department of Biotechnology	Clever Coat	ICAR KRISHI PUSA	1 year	5.0
Amount received (Rs.)							20.0
CAYm3							
1	Dr. Manoja Das		Department of Biotechnology	BIRAC EYUVA Project	BIRAC	2021-continue	266.5
2	Dr. Diptikanta Acharaya		DBT-BIRAC	To formulate and produce a novel cost effective ointment for the treatment of Vitligo	BIRAC	2022-2023	2.5
Amount received (Rs.)							269
Total Amount (Lacs) Received for the Past 3 Years							339.5

6.2.5. Consultancy Work (15)

Table No. 6.2.5.1: List of consultancy projects received from external agencies.

S.N.	PI name	Co-PI names if any	Name of the Dept., where	Project title*	Name of the Funding agency	Duration of the project	Amount (Lacs)

			project is sanctioned				
CAYm1							
Amount received (Rs.)							00
CAYm2							
1	Dr. Namita Panigrahy	Mr. Sambhu Prasad Babu	Department of Biotechnology	Industrial Wastewater Bioremediation Using Algal Consortia	Tata Chemicals Ltd., Gujarat	0.5 Year	1.50
Amount received (Rs.)							150000/-
CAYm3							
1	Dr. B. Rabi Prasad	Dr. Diptikanta Acharya	Department of Biotechnology	Process Validation and Scale-Up for Plant-Based Nutraceuticals	Himalaya Wellness Company, Bengaluru	1 Year	1.75
Amount received (Rs.)							1,75000/-
Total Amount (Lacs) Received for the Past 3 Years							3,25000/-

6.2.6. Institution Seed Money or Internal Research Grant to its Faculty for Research Work (05)

Table No. 6.2.6.1: List of faculty members received seed money or internal research grant from the institution.

S.N.	Faculty name	Project title/ Support for Activity	Duration	Amount (Lacs)	Amount Utilized (Lacs)	Outcomes of the project
1	Dr. Namita Panigrahy	Antibiotic resistance profiling in groundwater bacteria from industrial zones	18 Months	3.00	2.94	Data submitted for national repository; manuscript under review
2	Dr. Swastik Behera	Phytochemical screening and antimicrobial activity of rare medicinal plants	1 Year	2.50	2.25	Identified 2 bioactive compounds; conference presentation
Amount received (Rs.5,50,000/-)						
1	Dr. Diptikanta Acharya	Development of green catalysts from agro-waste for wastewater treatment	1 Year	4.5	4.0	Prototype developed; proposal submitted for DST funding

2	Dr. Pardha Saradhi Mathi	Assessment of Heavy Metal Contamination in Groundwater near Thermal Power Stations	1 Year	2.5	2.2	Heavy metal profile generated; submitted for publication; groundwater risk map developed
Amount received (Rs. 7,00,000/-)						
1	Dr. Manoja Das	Microplastic contamination in soil a biomonitoring approach	1 Year	4.5	4.4	Isolation of bacterial strains; 1 research paper published
2	Dr. B. Rabi Prasad	Bioremediation of pesticide-contaminated soil using native microbial consortia	1 Year	2.5	2.4	Isolation of bacterial strains; 1 research paper published
Amount received (Rs. 7,00,000/-)						
Total Amount (Lacs) Received for the Past 3 Years (19,50,000/-)						

Criterion 7: Facilities and Technical Support (100)

7.1. Adequate and Well-Equipped Laboratories, and Technical Manpower (40)

(Provide details of various laboratories for the program and at the department level. Also, please provide a list of technical support staff appointed by the College for the Department and their qualifications. Please do not give duplicate data from the sections 7.2 and 7.5.)

Table No.7.1.1: List of laboratories and technical manpower.

S. N.	Name of the Laboratory	No. of student s per setup (Batch Size)	Name of the major equipment	Weekly utilization status (all the courses for which the lab is utilized)	Technical Manpower support		
					Name of the technical staff	Designation	Qualification
1.	Biochemistry Lab	30	Refrigerated Centrifuge, Thermocycler, Gel Documentation, Uv-Vis Spectrophotometer, TLC Unit, Microtome, Double Door Refrigerator, Gel Electrophoresis Unit, Fermenter, Vacuum Pump, Digital Balance	24 Hours/ Week	Ms. Rinki Moharana	Lab Assistant	B.Tech
2.	Microbiology Lab	30	Mini autoclave, Compound Microscope, Binocular Microscopes, Laminar Airflow Hood,	24 Hours/ Week	Ms. Rinki Moharana	Lab Assistant	B.Tech

			Hot Air Oven, Orbital Shaker, Water Bath Shaker, Bod-Incubator, Heating Plates				
3.	Molecular Biology Lab	30	Gel Electrophoresis Vertical Unit, Electro Botting Unit, Elisa Reader, pH Meter, Mono Distillation Unit, Deep Freezer, Digital Balance, Colorimeter, Cyclomixer, Uv Transilluminator, Magnetic Stirrer	24 Hours/ Week	Mr. Pradumnya Rout	Lab Assistant	M.Sc
4.	Genetic Engineering & r-DNA Technology Lab		Gel Electrophoresis Apparatus, PCR Machine(Thermocycler), Spectrophotometer, Refrigerated Microcentrifuge, Freezers & Refrigerator, Laminar Air Flow Hood, Autoclave (for sterilization), BOD Incubator, Orbital Shaker, pH Meter, Magnetic Stirrer & Hot Plate, Distilled Water Unit, Analytical Balance, Microcentrifuge, Vortex Mixer, Water Bath Shaker	12 Hours/ Week	Mr. Pradumnya Rout	Lab Assistant	M.Sc

5.	Immunology & Immunotechnology Lab	30	ELISA Reader (Microplate Reader, Western Blot Apparatus, PCR Thermocycler, Inverted Microscope, Orbital Shaker, Centrifuges, Water Bath, Refrigerator (4°C), Vortex Mixer, pH Meter, Magnetic Stirrer, Hot Plate, Micropipettes	12 Hours/ Week	Ms. Jayashree Panigrahy	Lab Assistant	M.Sc
6.	Bioreactor Design Analysis	30	Fermenter, pH Meter, Dissolved Oxygen (DO) Meter, Uv-Vis Spectrophotometer, HPLC, Refrigerated Centrifuge, Magnetic Stirrer, Orbital Shaker, BOD Incubator, Laminar Air Flow Hood, Autoclave, Refrigerator, Distilled Water System, Digital Balance	24 Hours/ Week	Mulakala Kusuma Choudry	Lab Assistant	B.Tech
7.	Plant Biotechnology Lab	15	Laminar Air Flow Cabinet, Autoclave, Hot Air Oven, pH Meter, Magnetic Stirrer with Hot Plate, Compound Microscope, Growth Chamber, Water Bath Shaker	12 Hours/ Week	Ms. Jayashree Panigrahy	Lab Assistant	M.Sc

8.	Bioinformatics Lab	30	Personal Computers, Data Storage Server, Uninterruptible Power Supply (UPS), Printer, Bioinformatics Software Packages:BLAST,AutoDock, PyMOL,NCBI & PDB	24 Hours/ Week	Mulakala Kusuma Choudry	Lab Assistant	B.Tech

7.2. Additional Facilities Created for Improving the Quality of Learning Experience in Laboratories (20)

(Provide details of various additional facilities provided by the department to enhance the quality of learning in laboratories. Please do not give duplicate data from the sections 7.1 and 7.5.)

Table No.7.2.1: List of additional facilities.

S. N.	Name of the Facility	Purpose for creating facility	Utilization	Relevance to POs/PSOs
1.	COD Digester	Used to determine the Chemical Oxygen Demand (COD) of water and wastewater samples. Helps in assessing organic pollutant levels in industrial effluents and environmental water bodies.	Water analysis	PO1: Engineering Knowledge – Understanding water quality parameters and wastewater treatment. PO4: Conduct Investigations of Complex Problems – Analyzing organic pollutants and assessing environmental impact. PO7: Environment and Sustainability – Helps in

				environmental monitoring and pollution control.
2	Flame Photometer	Measures the concentration of alkali and alkaline earth metals like sodium (Na), potassium (K), lithium (Li), and calcium (Ca) in biological and environmental samples.	Helps in soil and agricultural analysis to determine nutrient levels in fertilizers.	PO4: Conduct Investigations of Complex Problems – Determining nutrient levels in biological and environmental samples. PO5: Modern Tool Usage – Utilization of advanced analytical instruments for scientific research.
3.	Viscometer	Measures the **viscosity** of liquids and semi-solids, crucial for quality control in food and pharmaceuticals	To assess product consistency and performance.	PO1: Engineering Knowledge – Understanding fluid dynamics and material properties. PO4: Conduct Investigations of Complex Problems – Testing viscosity in pharmaceuticals, food, and polymer industries.
4.	Rocky Max 3D Rocker	Provides gentle, uniform mixing of biological and chemical solutions in laboratories.	Used in Southern blotting, Western blotting, staining and de-staining of	PO4: Conduct Investigations of Complex Problems – Used in Western blotting, hybridization, and cell culture studies.

			gels in molecular biology.	PO5: Modern Tool Usage – Application of advanced laboratory techniques for molecular biology. PO12: Life-long Learning – Adapting to new laboratory methodologies and equipment usage.

7.3. Maintenance of Laboratories and Overall Ambiance (10)

(Provide details of overall laboratories maintenance and overall ambiance in the Department.)

The **Department of Biotechnology** at **GIET University, Odisha**, Gunupur is committed to maintaining high standards in laboratory infrastructure, ensuring a conducive environment for cutting-edge research and hands-on learning. The maintenance of laboratories and overall ambiance is given utmost priority to uphold safety, efficiency and innovation in biotechnology research and education.

➢ **Regular Maintenance and Upkeep of Laboratories**

- **Equipment Calibration & Servicing:** All major instruments, including Spectrophotometers, Bioreactors, HPLC, Thermocycler and bioinformatics servers undergo periodic calibration and maintenance to ensure accuracy and reliability.
- **Sterilization & Decontamination:** Autoclaves, laminar airflow chambers, and Biosafety cabinets are regularly sterilized to maintain aseptic conditions essential for microbiological and molecular biology experiments.
- **Scheduled Cleaning & Hygiene Protocols:** Workbenches, floors and storage areas are cleaned on regular basis with disinfectants, ensuring a dust-free and contamination-free environment.
- **Inventory & Chemical Safety Management:** Regular stock checks are conducted for chemicals, reagents and consumables. Expired or hazardous chemicals are disposed of following biosafety and environmental guidelines.
- If any equipment fails during operation, break down maintenance is taken up.
- After successful completion of laboratory for the academic year, Lab assistant checks the operating condition of equipment.

- If any major problems in the equipment, service technicians will be called for servicing. Once servicing is over for particular equipment, Lab assistant monitors the condition of the corresponding equipment over a period of time.

➢ **Overall Ambiance for an Enriching Learning Experience**

- **Green & Sustainable Campus:** The laboratories are surrounded by a green and eco-friendly environment **(surrounded by medicinal gardens)**, enhancing the quality of life and learning.
- **Well-Ventilated & Spacious Labs:** Ensuring a comfortable workspace with natural and artificial lighting to reduce strain during long experimental procedures.
- **Innovation & Entrepreneurship Support:** The **BIRAC Centre actively encourages start-up incubation and product development in the field of biotechnology**, creating an entrepreneurial ecosystem.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AIR FRYER
IFB


LEARN,
DISCOVER
EXPLORE


CHANGING ROOM

Laboratory facilities at Department of Biotechnology and BIRAC at GIET University

7.4. Safety Measures in Laboratories (10)

(Provide details of various safety measures deployed in each laboratory within the Department.)

Table No. 7.4.1: List of various safety measures in laboratories.

S.N.	Name of the Laboratory	Safety measures
1.	Biochemistry Lab	At our **Biochemistry Lab**, we adhere to strict safety protocols to ensure a safe and efficient working environment. The following safety measures are implemented: • Mandatory use of **lab coats, gloves and safety goggles** for handling

		instruments and chemicals. • All instruments are **properly grounded** and connected to **surge protectors**. • Regular inspection of **power cables, plugs, and sockets** to prevent electrical hazards. • Instruments like **spectrophotometers, PCR machines, chromatography systems** are **calibrated and maintained regularly**. • Equipment is **switched off and unplugged** after use to prevent overheating. • Proper storage and labelling of hazardous chemicals and reagents. • Handling of biological samples under biosafety level guidelines. • Use of sterile techniques to avoid contamination of biological and chemical reagents. • Flammable solvents (e.g., ethanol, acetone) stored in fireproof cabinets. • Fire extinguishers and emergency exits clearly marked and easily accessible. • **Segregation of chemical, biological and electronic waste** into designated disposal bins. • Clear labelling of reagents, power sources and instruments to prevent mix-ups. • No eating, drinking, or using mobile devices inside the lab. • Regular cleaning and organization of workspaces to minimize the risk of accidents.
2.	Microbiology Lab	**Faculties and students following the Standard Operating Procedures (SOPs)** – For handling pathogens, equipment use and emergency response. • **Use of Biosafety Cabinet (BSC)** for handling pathogenic microbes to prevent contamination. • Students wear Lab Coats / Gowns in the lab to protect clothing. • Gloves – disposable gloves to avoid contamination. • Use of face masks when worked with airborne pathogens. • Use of goggles to protect against splash hazards.

		• Eating and drinking is strictly not allowed to prevent ingestion of contaminants. • Proper hand hygiene – Wash hands before and after handling microbes. • Disinfection of work surfaces before and after experiments using 70% ethanol. • Labelling of samples & chemicals to prevents accidental misuse. • Biohazard waste bins – Separate bins for solid and liquid biohazard waste. • Autoclaving before disposal – All microbial cultures autoclaved before disposal. • **Chemical waste disposal** – Following proper protocols for disposing of stains, solvents, and reagents. • **Proper storage of microbial strains** and maintenance of cultures in refrigerators or freezers at appropriate temperatures.
3.	Molecular Biology Lab	Proper safety measures are essential to prevent contamination, ensure personal protection and maintain experimental integrity. Below are the key safety measures to be followed in the Molecular biology lab • **Personal Protective Equipment (PPE):** Always wear **lab coats, gloves, safety goggles and closed-toe shoes** to minimize exposure to chemicals and biological agents. • **Biosafety & Sterilization:** Work in **laminar air flow hood** when handling biological samples, disinfect work surfaces with **70% ethanol** and autoclave contaminated materials before disposal. • **Chemical Handling & Storage:** Store **carcinogenic reagents** (e.g., ethidium bromide, phenol-chloroform) in designated areas, use fume hoods and label all chemicals properly. • **Equipment Safety:** Maintain **centrifuges, electrophoresis systems, autoclaves and UV transilluminators**. • **Proper Waste Disposal:** Separate **biological and chemical waste**, autoclave biohazards and dispose of chemicals.

		• **Minimizing Aerosols & Contamination:** Pipette carefully, use filter tips and maintain a **clutter-free, organized workspace**. • **Fire & Electrical Safety:** Keep flammable chemicals away from ignition sources, inspect power cords, and ensure all lab personnel know the location of **fire extinguishers and emergency exits**. • **Emergency Preparedness:** Have **first aid kits and eyewash stations.** • **Good Laboratory Practices (GLP):** Label all reagents, maintain accurate records, avoid eating or drinking in the lab, and ensure proper training for all lab personnel.
4.	Genetic Engineering & r-DNA Technology Lab	Proper safety measures are essential to prevent contamination, ensure personal protection and maintain experimental integrity. Below are the key safety measures to be followed in the Genetic Engineering & r-DNA Technology Lab • **Personal Protective Equipment (PPE):** Always wear **lab coats, gloves, safety goggles and closed-toe shoes** to minimize exposure to chemicals and biological agents. • **Biosafety & Sterilization:** Work in **laminar air flow hood** when handling biological samples, disinfect work surfaces with **70% ethanol** and autoclave contaminated materials before disposal. • **Chemical Handling & Storage:** Store **carcinogenic reagents** (e.g., ethidium bromide, phenol-chloroform) in designated areas, use fume hoods and label all chemicals properly. • **Equipment Safety:** Maintain **centrifuges, electrophoresis systems, autoclaves and UV transilluminators**. • Work surfaces should be cleaned regularly with disinfectants (e.g., 70% ethanol or 10% bleach). • **Proper Waste Disposal:** Separate **biological and chemical waste**, autoclave biohazards and dispose of chemicals.

5.	Immunology & Immunotechnology Lab	Below are the key safety measures to be followed in the Immunology & Immunotechnology Lab • **Personal Protective Equipment (PPE):** Always wear **lab coats, gloves, safety goggles and closed-toe shoes** to minimize exposure to chemicals and biological agents. • **Biosafety & Sterilization:** Work in **laminar air flow hood** when handling biological samples, disinfect work surfaces with **70% ethanol** and autoclave contaminated materials before disposal. • All contaminated materials (e.g., pipette tips, microplates, tubes, gloves) must be disposed of in biohazard bags and autoclaved before final disposal. • Use fresh, sterile pipette tips for every reagent and sample. Avoid touching the sides of wells of the gel. • Each immunoassay kit has specific handling, incubation, and disposal guidelines. Always follow the protocol strictly to avoid false results or reagent degradation.
6.	Bioreactor Design and Analysis Lab	The Bioreactor Design and Analysis Lab follows stringent safety measures to ensure a contamination-free, secure and well-regulated environment for research and practical learning. The following safety protocols are strictly maintained: • **Personal Protective Equipment (PPE):** Always wear **lab coats, gloves, safety goggles and closed-toe shoes** to minimize exposure to chemicals and biological agents. • Autoclave bioreactors, tubing and media before and after use to prevent contamination and ensure biosafety. • Inoculations and culture transfers should be performed in a **biosafety cabinet or laminar airflow hood**. Cultures must be properly labeled and disposed of after autoclaving.

		• Bioreactors should be fitted with safety valves or rupture discs to prevent over-pressurization. Operators should be trained to shut down systems in case of malfunction. • Sensors (pH, DO, temperature), pumps, and control systems must be calibrated regularly to ensure accurate readings and safe operation.
7.	Plant Biotechnology Lab	The Biotechnology Department's Plant Tissue Culture Lab follows stringent safety measures to ensure a contamination-free, secure, and well-regulated environment for research and practical learning. The following safety protocols are strictly maintained: • Sterile Work Environment – All culture work is conducted in laminar airflow cabinets, ensuring an aseptic environment and reducing contamination risks. • Use of Personal Protective Equipment (PPE) – Lab personnel adhere to the use of gloves, lab coats, masks and head caps to prevent cross-contamination and maintain hygiene. • Proper Handling of Chemicals – MS media, plant growth regulators, and disinfectants are handled using safety gloves, fume hoods, and chemical-resistant storage. • Strict Disinfection Protocols – Workspaces and instruments are sterilized using ethanol (70%) and UV radiation, and regular autoclaving of media and tools is practiced. • Environmental Control – Growth chambers and culture rooms are monitored for temperature, humidity, and light intensity, ensuring optimal conditions for plant growth. • Waste Disposal & Biohazard Management – Used culture media and biological waste are autoclaved before disposal following biosafety guidelines. • Proper labelling & Documentation – All culture materials, chemicals, and reagents are clearly labelled to prevent handling errors and ensure traceability.

		• Safe Handling of Glassware & Equipment – Fragile glassware such as Petri dishes, flasks and test tubes are carefully managed to avoid breakage and injuries.
8.	Bioinformatics Lab	The Bioinformatics Lab in the Biotechnology Department follows essential safety protocols to ensure data security, ergonomic efficiency, and system integrity. The following safety measures are actively maintained: • Cybersecurity & Data Protection – All computational systems are protected by firewalls, antivirus software and encrypted storage to prevent unauthorized access and cyber threats. • Regular Data Backup – Automated backup systems and cloud storage solutions are implemented to ensure data security and prevent loss due to system failures. • Access Control & Authentication – Multi-level authentication and user-specific access are enforced for high-performance computing (HPC) systems and sensitive bioinformatics tools. • Safe Handling of Electronic Equipment – Regular server maintenance, UPS backups and proper ventilation systems are in place to prevent overheating, electrical hazards and hardware failures.
9.	Project Lab & Research Lab	**Faculties and students following the Standard Operating Procedures (SOPs)** – For handling pathogens, equipment use and emergency response. • **Use of Biosafety Cabinet (BSC)** for handling pathogenic microbes to prevent contamination. • Students wear Lab Coats / Gowns in the lab to protect clothing. • Gloves – disposable gloves to avoid contamination. • Use of face masks when worked with airborne pathogens. • Use of goggles to protect against splash hazards. • Eating and drinking is strictly not allowed to prevent ingestion of contaminants. • Proper hand hygiene – Wash hands before and after handling microbes.

		• Disinfection of work surfaces before and after experiments using 70% ethanol. • Labelling of samples & chemicals to prevents accidental misuse. • Biohazard waste bins – Separate bins for solid and liquid biohazard waste. • Autoclaving before disposal – All microbial cultures autoclaved before disposal. • **Chemical waste disposal** – Following proper protocols for disposing of stains, solvents, and reagents. • **Proper storage of microbial strains** and maintenance of cultures in refrigerators or freezers at appropriate temperatures.

7.5. Project Laboratory/Research Laboratory /Centre of Excellence (20)

(Provide details of laboratories for supporting projects, research, Centre of Excellence, innovation, and startups etc. Please do not give duplicate data from the sections 7.1 and 7.2.)

Table No. 7.5.1: List of project laboratory/research laboratory /Centre of Excellence.

S.N.	Name of the Laboratory
1.	Research lab-1 / BIRAC E-Yuva Centre
2.	Research lab-2/ BIRAC E-Yuva Centre
3.	Project lab

Criterion 8: Continuous Improvement

8. 1. Actions Taken Based on the Results of Evaluation of the COs, POs, and PSOs (40)

8.1.1. Actions Taken Based on the Results of Evaluation of the COs Attainment (20)

Table No.8.1.1: Course-wise CO Attainment Analysis Comparing Target and Actual Levels with Identified Gaps and Remedial Actions

Sl no	Course Code	Course Titles	Target level	Attainment Level	Identified Gaps	Actions Taken
1	C101	Engineering Mathematics-I	2.4	2.1	Insufficient conceptual clarity and application in problem-solving.	Conducted remedial sessions and provided additional problem-solving assignments.
2	C102	Engineering Chemistry	2.2	2.0	Gaps in understanding chemical bonding and reaction mechanisms.	Conducted concept review lectures and provided visual aids for complex concepts.
3	C103	Basic of Mechanics	2.3	2.0	Difficulty in visualizing and applying mechanical principles.	Included video tutorials and hands-on problem-solving sessions.
4	C 104	Programming for Problem Solving	2.0	1.9	Difficulty in programming logic and algorithm development.	Implemented regular coding practice sessions and lab exercises.
5	C 105	Communicative English and Soft Skills	2.0	2.1	Target Achieved.	—
6	C 106	Engineering Chemistry Lab	2.2	2.0	Errors in experimental setup and observation recording.	Provided lab manuals and conducted guided lab sessions.
7	C 107	Programming for problem solving lab	2.1	2.0	Inadequate hands-on practice and debugging skills.	Introduced step-wise programming tutorials and weekly lab evaluations.

8	C 108	Communicative English and Soft Skills Lab	2.0	2.1	Target Achieved.	—
9	C 109	Engineering Workshop	2.2	2.0	Limited hands-on experience with workshop tools and techniques.	Provided extended lab hours and practical demonstrations.
10	C 110	Engineering Mathematics-II	2.4	2.1	Struggles with advanced calculus and linear algebra applications.	Conducted focused tutorials and shared video lectures for complex topics
11	C 111	Engineering Physics	2.0	1.9	Challenges in applying theoretical principles to practical problems.	Organized concept-based lectures and interactive demonstrations.
12	C 112	Basics Electrical and electronics Engineering	2.0	1.8	Lack of foundational understanding in circuit analysis and components.	Conducted tutorial sessions and introduced simulation tools.
13	C 113	Data Structure and Algorithm	2.2	2.0	Difficulty in understanding abstract data structures and algorithm analysis.	Weekly coding tasks and peer learning through group discussions.
14	C 114	Communicative English and Technical Communication	2.0	1.9	Inadequate technical vocabulary and report-writing skills.	Introduced technical writing workshops and peer-review exercises.
15	C 115	Engineering Physics Lab	2.1	1.9	Difficulty in correlating theoretical concepts with lab results.	Provided lab preparation materials and faculty-guided experiments.
16	C 116	Basics Electrical and electronics Engineering Lab	2.0	1.9	Inaccuracy in component	Demonstrated circuit building with simulation

					handling and circuit assembly.	software and extra lab sessions.
17	C 117	Data Structure and Algorithm Lab	2.2	2.0	Weakness in implementing data structures in code.	Conducted weekly code reviews and hands-on lab assignments.
18	C 118	Communicative English and Technical Communication Lab	2.0	2.1	Target Achieved.	—
19	C 129	Engineering Graphics and design Lab	2.2	2.0	Difficulty understanding orthographic and isometric projections.	Provided extra practice sessions using CAD tools and guided worksheets.
20	C 120	Induction Program	2.0	2.0	Target Achieved.	—
21	C 201	Basic Biology	2.0	1.9	Lack of clarity in basic biological concepts and terminology.	Introduced visual aids and conducted quiz-based learning sessions.
22	C 202	Biochemistry	2.2	2.0	Difficulty in understanding biochemical pathways and reactions.	Provided pathway maps, flowcharts, and mnemonic aids.
23	C 203	Microbiology	2.2	2.0	Challenges in classification and microbial techniques understanding.	Conducted hands-on sessions and peer-led revision classes.
24	C 204	Engineering Mathematics III	2.4	2.1	Inadequate understanding of transforms and differential equations.	Held remedial math workshops and shared online resources.
25	C 205	Object Oriented Programming using Java	2.2	2.0	Difficulty with class-object structure and inheritance concepts.	Provided structured lab examples and weekly assignments.

26	C 206	Organizational Behavior	2.0	1.9	Incomplete understanding of behavioral theories and case studies.	Incorporated case-based discussions and real-world simulations.
27	C 207	Biochemistry Lab	2.1	2.0	Inaccurate pipetting and data interpretation from biochemical assays.	Conducted demonstration experiments and assessment-based lab practice.
28	C 208	Microbiology Lab	2.2	2.2	Contamination issues and improper aseptic technique.	Conducted hygiene and technique workshops before practicals.
29	C 209	Obejct Oriented Programming using Java Lab	2.2	2.0	Implementation gaps in core OOP principles.	Assigned mini projects to reinforce practical understanding.
30	C 210	Summer Internship I	2.4	2.3	Variability in learning outcomes due to project mismatch or improper guidance.	Created evaluation rubrics and industry mentorship feedback loop.
31	C 211	Essence of Indian Traditional Knowledge	2.0	1.8	Limited engagement with modern applications of traditional knowledge.	Encouraged discussions on the integration of traditional and contemporary knowledge.
32	C 212	Molecular Biology	2.4	2.1	Gaps in understanding molecular techniques like PCR, gel electrophoresis.	Conducted additional hands-on lab sessions and shared protocol videos.
33	C 213	Biostatistics	2.2	2.0	Difficulty in statistical data interpretation and hypothesis testing.	Implemented weekly data analysis exercises and tutorial sessions.
34	C 214	Bio-analytical Techniques	2.3	2.1	Lack of practical exposure to	Provided guided sessions on

					advanced bio-analytical instruments.	instrumentation handling and result interpretation.
35	C 215	Upstream Process Engineering	2.5	2.3	Weakness in understanding microbial fermentation processes.	Organized plant visits and practical demonstrations of bioreactors.
36	C 216	Fluid Mechanics and Hydraulic Machine	2.2	2.0	Issues with applying theoretical concepts to real-world fluid flow problems.	Conducted problem-solving sessions with real-world fluid dynamics examples.
37	C 217	Engineering Economics and Costing	2.1	2.0	Difficulty understanding cost analysis methods and economic modeling.	Hosted industry case studies and in-depth discussions on costing strategies.
38	C 218	Molecular Biology Lab	2.4	2.2	Limited proficiency in performing PCR and gel electrophoresis experiments.	Organized advanced lab sessions focusing on molecular biology techniques.
39	C 219	Biostatistics Lab	2.2	2.0	Inadequate proficiency in using statistical software for data analysis.	Provided hands-on software training and statistical analysis workshops.
40	C 220	Bio Analytical Lab	2.4	2.1	Lack of understanding in sample preparation and advanced analytical techniques.	Organized additional lab training on advanced analytical methods.
41	C 221	Upstream Process Engineering Lab	2.5	2.2	Difficulty in operating and optimizing fermentation systems.	Introduced process simulation exercises and team-based troubleshooting tasks.

42	C 221	Minor Project I	2.5	2.3	Lack of clarity in defining project scope and research objectives.	Provided mentoring on project planning and regular progress review sessions.
43	C 222	Environmental Science	2.2	2.0	Limited understanding of environmental regulations and sustainability.	Introduced case studies on sustainability and green technologies.
44	C 301	Genetic Engineering and r-DNA Technology	2.5	2.3	Inadequate knowledge of CRISPR and gene-editing techniques.	Hosted expert lectures and hands-on workshops on gene editing.
45	C 302	Immunology and Immuno-technology	2.3	2.1	Difficulty understanding immune responses and technology applications.	Provided in-depth case studies and lab exercises on immunology techniques.
46	C 303	Biochemical Reaction Engineering	2.5	2.3	Insufficient understanding of reaction kinetics and reactor design principles.	Conducted more in-depth theoretical and practical sessions on reactor dynamics
47	C 304	Bioreactor Design and Analysis	2.5	2.2	Difficulty in optimizing bioreactor performance for large-scale production.	Provided additional lab simulations and case studies of real-world bioreactor operations.
48	C 305	Industrial Microbiology and Enzyme Technology	2.6	2.4	Lack of experience with enzyme production and microbial strain optimization.	Organized enzyme production workshops and industrial exposure sessions.
49	C 306	Process Instrumentation	2.4	2.2	Challenges in integrating instrumentation with bioprocesses.	Conducted workshops on process control and instrumentation handling

50	C 307	Human Values and Professional Ethics	2.0	1.8	Lack of real-world context in understanding professional ethics in biotechnology.	Introduced guest lectures from industry professionals and case studies on ethical dilemmas.
51	C 308	Genetic Engineering and r-DNA Technology Lab	2.5	2.3	Limited practical experience with gene cloning techniques.	Held more hands-on lab sessions on CRISPR, gene cloning, and sequencing techniques.
52	C 309	Immunology and Immuno-technology Lab	2.4	2.2	Difficulty in understanding immunological assays and applications.	Introduced practical demonstrations of ELISA, Western Blotting, and PCR assays.
53	C 310	Bioreactor Design and Analysis Lab	2.5	2.3	Lack of hands-on experience with advanced bioreactor systems.	Increased lab hours for simulating bioreactor systems and data analysis.
54	C 311	Minor Project II	2.5	2.4	Some students faced challenges in project scope and implementation.	Conducted project management workshops and regular progress meetings.
55	C 312	Summer Internship II	2.6	2.5	Limited exposure to industry practices in biotechnology.	Established collaborations with industry partners for better internship experiences.
56	C 313	Plant Biotechnology	2.5	2.3	Gaps in understanding of plant tissue culture and gene transfer techniques.	Hosted practical sessions on tissue culture and plant transformation methods.
57	C 314	Bioinformatics	2.5	2.3	Difficulty in using bioinformatics tools for large genomic datasets.	Conducted workshops on bioinformatics software and data analysis techniques.

58	C 315	Downstream Process Engineering	2.6	2.4	Lack of clarity in understanding the downstream processing steps in biomanufacturing.	Organized practical sessions on chromatography and protein purification techniques
59	C 316	Environmental Biotechnology	2.4	2.2	Insufficient focus on waste management and environmental impact analysis.	Included case studies on environmental biotech applications in waste management and clean tech.
60	C 317	Nano biotechnology	2.6	2.4	Difficulty in understanding nanomaterial synthesis and application in biotech.	Hosted webinars and hands-on workshops on nanomaterial synthesis and nano drug delivery.
61	C 318	Optimization in Engineering	2.3	2.1	Lack of experience in optimizing bioprocesses using mathematical models.	Provided additional case studies and problem-solving exercises on process optimization
62	C 319	Dietetics and Nutrition	2.5	2.3	Lack of practical knowledge in nutritional assessments and diet planning.	Conducted hands-on workshops and case studies on nutritional analysis.
63	C 320	Plant Biotechnology Lab	2.6	2.4	Insufficient experience with plant genetic modification techniques.	Increased lab hours for genetic transformation and tissue culture practices.
64	C 321	Bioinformatics Lab	2.6	2.4	Limited exposure to bioinformatics tools and applications in genomics.	Organized additional sessions on genomic data analysis and tool usage.
65	C 322	Minor Project III	2.7	2.6	Challenges in project scope and	Provided mentorship and project management

					resource management.	workshops for better execution
66	C 401	Food Biotechnology	2.8	2.6	Difficulty in understanding food preservation and fermentation techniques.	Conducted practical sessions on food preservation, fermentation, and safety standards.
67	C 402	Medical and Pharmaceutical Biotechnology	2.9	2.7	Lack of exposure to drug development and biotechnology in medicine.	Invited guest speakers from the pharma industry and conducted case studies.
68	C 403	Animal Biotechnology	2.8	2.6	Insufficient understanding of animal cell culture and genetic engineering.	Conducted workshops and demonstrations on animal cell culture and cloning techniques.
69	C 404	Entrepreneurship Development	3.0	2.8	Difficulty in developing a comprehensive business plan for biotech ventures.	Organized seminars on entrepreneurship, business plan development, and funding
70	C 405	Summer Internship III	3.1	2.9	Limited industry exposure to cutting-edge biotechnology applications.	Established collaborations with industry partners for more focused internships.
71	C 406	Major Project I	3.2	3.0	Challenges in conducting independent research and handling large datasets.	Offered research methodology workshops and regular one-on-one mentoring sessions.
72	C 407	Protein Engineering	2.9	2.7	Difficulty in understanding protein folding, function, and engineering.	Hosted hands-on lab sessions and provided additional reading materials on protein design.
73	C 408	IPR, Bioethics and Biosafety	2.7	2.5	Limited understanding of intellectual property rights	Organized seminars with legal experts and industry professionals

					and biosafety regulations.	on IPR and biosafety guidelines.
74	C 409	Biomedical Instrumentation	2.8	2.6	Challenges in understanding the working of medical instrumentation.	Conducted practical demonstrations of biomedical devices and instruments.
75	C 410	Major Project II	3.3	3.1	Issues with project implementation and data analysis in the final phase.	Provided targeted mentorship and technical support for troubleshooting research challenges.

8.1.2 Actions Taken Based on the Results of Evaluation of each of the POs & PSOs (20)

Based on a thorough evaluation of the Program Outcomes (POs) and Program Specific Outcomes (PSOs) attainment data over multiple academic years, several areas of concern were identified. Appropriate corrective measures were implemented to strengthen the attainment levels and ensure holistic development of students. The following are some representative cases of gaps identified and actions taken:

Sample 1: Laboratory Infrastructure Limitation Affecting PO4 and PSO1

Observation:

Attainment of PO4 (conduct investigations of complex problems) and PSO1 (Apply core knowledge of biotechnology in solving real-world problems) was found to be below the target in courses involving

laboratory experiments in molecular biology and instrumentation. Feedback from faculty and students revealed that outdated equipment and lack of advanced software tools hindered accurate experimentation and data analysis.

Action Taken:

Upgradation of laboratory infrastructure was undertaken. Key equipment such as advanced UV-Vis spectrophotometers, PCR thermocyclers, and high-precision micropipettes were procured. Open-source bioinformatics and statistical tools (e.g., R, Python libraries, and ImageJ) were introduced for data interpretation. These upgrades enabled students to conduct and interpret complex experiments more efficiently.

Sample 2: Poor Performance in Statistical and Analytical Components Affecting PO1 and PO2

Observation:

In the Biostatistics and Bioanalytical Techniques courses, the attainment of PO1 (apply knowledge of mathematics, science, and engineering) and PO2 (identify, formulate, and solve problems) was consistently low. An analysis of internal assessments and end-semester exams indicated difficulty in grasping statistical concepts and applying them to biological datasets.

Action Taken:

The syllabus of the Biostatistics course was revised to include application-based modules with case studies. Additional tutorial sessions were introduced focusing on software-based data handling using MS Excel, SPSS, and R. Workshops and hands-on assignments were incorporated to reinforce understanding. Emphasis was placed on integrating biostatistical tools in project work to improve long-term retention and relevance.

Table No.8.1.2: POs Attainment Levels and Actions for improvement – 2023-24

POs	Target Level	Attainment Level	Observations	Action Taken
PO1: Engineering knowledge				
PO1	2.4	2.10	Students demonstrated weak application of interdisciplinary core biotechnology concepts and limited use of	• Organized workshops on core biotechnology tools and modeling software. • Invited expert lectures on applied biotech domains.

			computational tools like R, MATLAB.	• Introduced advanced practical modules using upgraded instruments.
PO2: Problem analysis				
PO2	2.4	2.05	Difficulty in breaking down biological problems and translating them into investigable hypotheses.	• Introduced real-world case studies in class. • Conducted bioinformatics and analytical problem-solving tutorials. • Peer discussions and group assignments for developing analytical skills.
PO3: Design/development of solutions				
PO3	2.4	1.90	Students struggled to design experiments and processes considering biosafety, ethics, and environmental issues.	• Design-based mini projects introduced with societal and biosafety rubrics. • Workshops on synthetic biology and bioengineering designs. • Exposure to regulatory design protocols.
PO4: Conduct investigations of complex problems				
PO4	2.4	2.4	Target achieved, but continuous improvement aimed.	• Real-life case studies incorporated. • Research exposure through summer internships and capstone projects. • Workshops on advanced experimental design and statistical analysis.
PO5: Modern tool usage				
PO5	2.4	1.8	Limited hands-on proficiency in bioinformatics and biotech software tools.	• Hands-on training on tools like BLAST, MEGA, SPSS, Python for bio-data. • Curriculum revision to include tool-based assignments. • Expert sessions by computational biology professionals.
PO6: The engineer and society				
PO6	2.4	1.75	Weak understanding of ethical, societal, and legal issues related to biotech innovations..	• Case studies on GMO, CRISPR, and bioethics integrated into class. • Seminars and guest lectures on biotech regulations and societal implications.

				• Community outreach projects promoting awareness of biotech applications.
PO7: Environment and sustainability				
PO7	2.4	2.00	Limited understanding of biosolutions to environmental challenges.	• Mini-projects on bioremediation, green biotechnology, and waste management. • Visits to eco-friendly biotech industries. • Talks on climate-resilient and sustainable biotech practices.
PO8: Ethics				
PO8			Weak ethical reasoning in case studies and decision-making scenarios.	• Introduced a mandatory module on bioethics and human values. • Role-play and debates on controversial biotech practices. • Evaluation rubrics revised to assess ethical reasoning.
PO9: Individual and team work				
PO9	2.4	1.74	Challenges in working collaboratively and taking responsibility in group projects.	• Structured team-based projects with role distribution. • Peer assessment introduced. • Training sessions on leadership and group dynamics.
PO10: Communication				
PO10	2.4	2.0	Difficulty in articulating technical concepts in written reports and oral presentations.	• Scientific writing and communication workshops. • Poster and oral presentation competitions conducted. • Industry-interfacing events for real-world interaction.
PO11: Project management and finance				
PO11	2.4	1.79	Gaps in planning, budgeting, and execution of biotech projects.	• Mini-projects included budgeting and Gantt chart planning. • Sessions on biotech entrepreneurship and fund management.

				• Exposure to industrial project timelines and reporting systems.
PO12: Life-long learning				
PO12	2.4	1.52	Low self-driven learning and engagement with online resources or upskilling platforms.	• Encouraged NPTEL/SWAYAM certification courses. • COs redefined with independent learning components. • Expert talks on career pathways and research trends.

Table No.8.1.3: PSOs Attainment Levels and Actions for improvement – 2023-24

PSOs	Target Level	Attainment Level	Observations	Action Taken
PSO-1:	2.4	2.1	Students demonstrated limited integration of core biotechnology principles with modern tools in applied research and industrial contexts..	• Organized workshops on advanced biotechnology techniques including CRISPR, next-gen sequencing, and protein engineering. • Conducted industry-oriented mini-projects focused on translational research. • Introduced hands-on modules using analytical instruments and bioprocessing equipment. • Hosted expert sessions on emerging industrial biotech applications.
PSO-2:	2.4	2.0	Students lacked exposure to real-world problem-solving scenarios and interdisciplinary	• Introduced real-time case studies and hackathons targeting agricultural waste, food adulteration, and bioremediation.

			approaches in agriculture, food, and environmental biotechnology.	• Collaborative projects with research institutions and local industries addressing environmental and food security challenges. • Exposure to field-based problem-solving and community engagement. • Integration of remote sensing, IoT, and microbial solutions in course projects.
PSO-3:	2.4	1.9	Students showed limited participation in entrepreneurship activities and lifelong learning beyond academic curriculum.	• Conducted bootcamps on biotech startups, IP management, and funding opportunities. • Promoted NPTEL/SWAYAM courses and certifications relevant to industrial biotechnology. • Organized startup pitch events and mentorship through BioNEST and E-YUVA networks. • Introduced career talks and innovation club activities to encourage continuous self-improvement.

8.2. Academic Audit and Actions Taken Thereof During the Period of Assessment (10)

Academic Auditing Overview

The academic audit is a structured quality assurance mechanism aimed at enhancing the overall academic

environment of the institution. It ensures that teaching and learning practices adhere to defined standards and best practices, enabling the institution to produce competent graduates capable of contributing effectively to the fields of biotechnology, engineering, and research.

Objectives of Academic Audit:

The primary goals of the academic audit include:

- Ensuring academic accountability across departments and programs.
- Defining and maintaining the quality of each academic component to ensure consistency in technical education delivery.
- Safeguarding the integrity and effectiveness of academic operations.
- Evaluating and enhancing the teaching-learning process to maximize performance and outcomes for both faculty and students.

Audit Structure and Process:

An **Internal Academic Audit Committee** is constituted, comprising:

- The Registrar as the Chairperson,
- Two internal academic experts, and
- A representative from the Internal Quality Assurance Cell (IQAC).

Departments are instructed to maintain comprehensive academic records and documentation. These documents are reviewed periodically by the audit team following a predefined schedule. Based on the audit findings, a detailed report is submitted that includes observations, recommendations, and mid-course corrective measures. Departments must submit an **Action Taken Report (ATR)** in response, outlining compliance or justifying deviations.

Key Components of the Academic Audit:

1. **Course File Evaluation** – Course delivery plans, lesson plans, assignments, and assessment records are reviewed for completeness and quality.

2. **Lecture/Laboratory Evaluation** – Classroom and laboratory sessions are monitored to ensure effective pedagogy and technical delivery.
3. **Faculty Development Program (FDP) Participation** – Review of FDPs attended by faculty members to enhance subject knowledge, teaching methods, and research aptitude.
4. **Review and Feedback** – Continuous monitoring and comparison of faculty performance from the beginning to the end of the semester.

Actions Taken Based on Academic Audit Findings:

- Faculty are required to implement the recommendations provided by the audit committee, especially related to pedagogy and curriculum delivery.
- Emphasis is placed on adopting teaching methodologies that are inclusive and effective for diverse learner profiles.
- Adherence to the lesson plan and timely syllabus completion is closely monitored. In cases of shortfall, faculty conduct **additional classes** to meet coverage goals.
- Monthly progress reviews and result analyses are undertaken. Faculty are guided to arrange **remedial classes** for students with lower academic performance.
- Faculty are encouraged and, in some cases, mandated to attend **Faculty Development Programs (FDPs)** for enhancing communication skills, teaching techniques, and research capability.
- Academic audits are initiated at the start of each semester to ensure preparedness, especially regarding course files and planning.
- **Student feedback** is collected twice per semester for each course through an anonymous process to ensure unbiased insights into teaching effectiveness.
- Communication and teaching-learning methodology workshops are conducted by the **Training and Placement Cell**, alongside department-level FDPs, expert lectures, and technical seminars held at least once per semester.

Table No.8.2.1: Academic Audit Conduct Mechanism:

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR

Academic Administrative Audit (AAA)

GIET University Campus
Gunupur, At – Gobriguda, Po- Kharling, Dist. - Rayagada,
Odisha -India, 765022, 06857-250170, 06857-250172

OFFICE OF THE REGISTRAR
GIET UNIVERSITY

Gunupur-765022, Dist. Rayagada, Odisha, India

Ref. No. 46 /Reg/GIETU Date: 21-02-2024

CIRCULAR

This is for all concerned that the department review meeting shall be held as per the schedule given below.

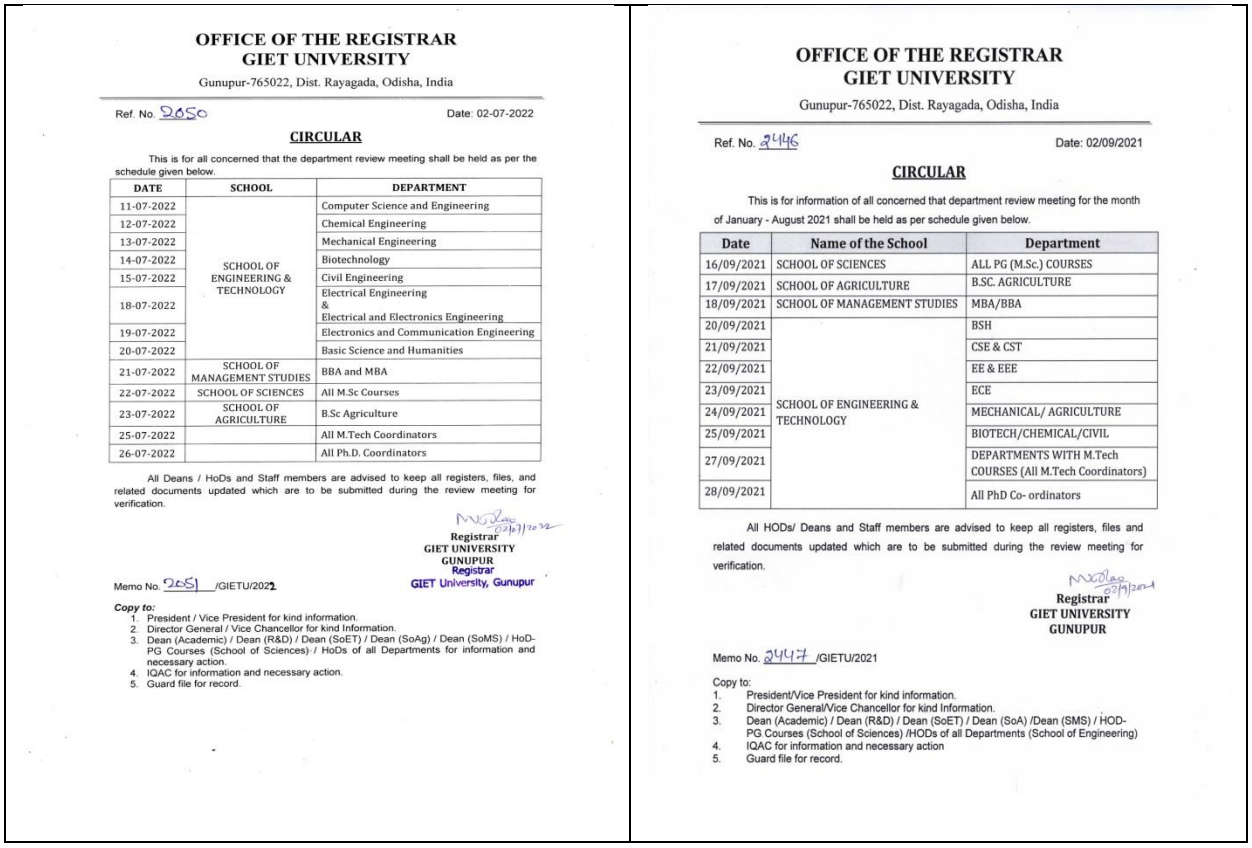
DATE	SCHOOL	DEPARTMENT
11-03-24	SCHOOL OF ENGINEERING & TECHNOLOGY	Biotechnology
12-03-24	SCHOOL OF ENGINEERING & TECHNOLOGY	Electronics and Communication Engineering
13-03-24	SCHOOL OF ENGINEERING & TECHNOLOGY	Electrical Engineering/Electrical and Electronics Engineering
14-03-24	SCHOOL OF ENGINEERING & TECHNOLOGY	Civil Engineering
15-03-24	SCHOOL OF ENGINEERING & TECHNOLOGY	Chemical Engineering
16-03-24	SCHOOL OF SCIENCES	BCA & MCA
18-03-24	SCHOOL OF MANAGEMENT STUDIES	BBA and MBA
19-03-24	SCHOOL OF ENGINEERING & TECHNOLOGY/ SOS	Basic Science and Humanities & SOS
20-03-24	SCHOOL OF AGRICULTURE	B.Sc. (HONS) AGRICULTURE
21-03-24	SCHOOL OF NURSING	B.Sc. NURSING
22-03-24	SCHOOL OF ENGINEERING & TECHNOLOGY	Computer Science and Engineering
23-03-24	SCHOOL OF ENGINEERING & TECHNOLOGY	Mechanical Engineering

All Deans / HoDs and Staff members are advised to keep all related documents updated which are to be submitted during the review meeting for verification including course files.

Registrar
GIET UNIVERSITY
GUNUPUR

Memo No. 47 /GIETU/2024

Copy to:
1. President / Vice President for kind information.
2. Director General / Vice Chancellor for kind Information.
3. Dean (Academic) / Dean (R&D) / Dean (SoET) / Dean (SoAg) / Dean (SoMS) / HoD-PG Courses (School of Sciences) / HoDs of all Departments for information and necessary action.
4. All Ph.D. and M.Tech Coordinator for information and necessary action.
5. IQAC for information and necessary action.
6. Guard file for record.



OFFICE OF THE REGISTRAR
GIET UNIVERSITY
Gunupur-765022, Dist. Rayagada, Odisha, India

Ref. No. 2650 Date: 02-07-2022

CIRCULAR

This is for all concerned that the department review meeting shall be held as per the schedule given below.

DATE	SCHOOL	DEPARTMENT
11-07-2022	SCHOOL OF ENGINEERING & TECHNOLOGY	Computer Science and Engineering
12-07-2022		Chemical Engineering
13-07-2022		Mechanical Engineering
14-07-2022		Biotechnology
15-07-2022		Civil Engineering
18-07-2022		Electrical Engineering & Electrical and Electronics Engineering
19-07-2022		Electronics and Communication Engineering
20-07-2022		Basic Science and Humanities
21-07-2022	SCHOOL OF MANAGEMENT STUDIES	BBA and MBA
22-07-2022	SCHOOL OF SCIENCES	All M.Sc Courses
23-07-2022	SCHOOL OF AGRICULTURE	B.Sc Agriculture
25-07-2022		All M.Tech Coordinators
26-07-2022		All Ph.D. Coordinators

All Deans / HoDs and Staff members are advised to keep all registers, files, and related documents updated which are to be submitted during the review meeting for verification.

Registrar
GIET UNIVERSITY
GUNUPUR
Registrar
GIET University, Gunupur

Memo No. 2651 /GIETU/2022

Copy to:
1. President / Vice President for kind information.
2. Director General / Vice Chancellor for kind Information.
3. Dean (Academic) / Dean (R&D) / Dean (SoET) / Dean (SoAg) / Dean (SoMS) / HoD-PG Courses (School of Sciences) / HoDs of all Departments for information and necessary action.
4. IQAC for information and necessary action.
5. Guard file for record.

OFFICE OF THE REGISTRAR
GIET UNIVERSITY
Gunupur-765022, Dist. Rayagada, Odisha, India

Ref. No. 2446 Date: 02/09/2021

CIRCULAR

This is for information of all concerned that department review meeting for the month of January - August 2021 shall be held as per schedule given below.

Date	Name of the School	Department
16/09/2021	SCHOOL OF SCIENCES	ALL PG (M.Sc.) COURSES
17/09/2021	SCHOOL OF AGRICULTURE	B.SC. AGRICULTURE
18/09/2021	SCHOOL OF MANAGEMENT STUDIES	MBA/BBA
20/09/2021	SCHOOL OF ENGINEERING & TECHNOLOGY	BSH
21/09/2021		CSE & CST
22/09/2021		EE & EEE
23/09/2021		ECE
24/09/2021		MECHANICAL/ AGRICULTURE
25/09/2021		BIOTECH/CHEMICAL/CIVIL
27/09/2021		DEPARTMENTS WITH M.Tech COURSES (All M.Tech Coordinators)
28/09/2021		All PhD Co- ordinators

All HODs/ Deans and Staff members are advised to keep all registers, files and related documents updated which are to be submitted during the review meeting for verification.

Registrar
GIET UNIVERSITY
GUNUPUR

Memo No. 2447 /GIETU/2021

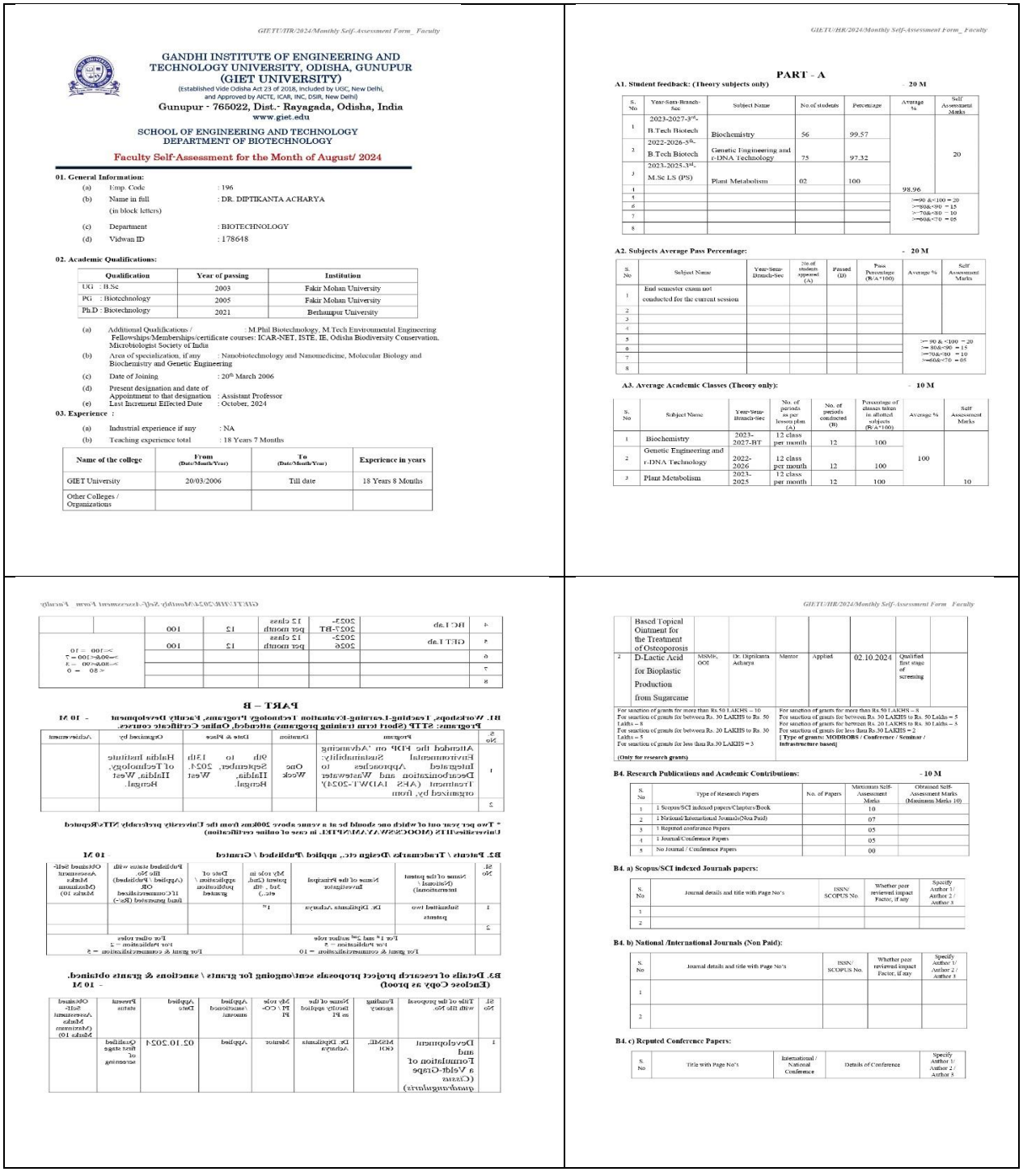
Copy to:
1. President/Vice President for kind information.
2. Director General/Vice Chancellor for kind Information.
3. Dean (Academic) / Dean (R&D) / Dean (SoET) / Dean (SoA) /Dean (SMS) / HOD-PG Courses (School of Sciences) /HODs of all Departments (School of Engineering)
4. IQAC for information and necessary action
5. Guard file for record.

Assessment Criteria:

To ensure continuous improvement in teaching and learning practices, a structured assessment system has been introduced, comprising **monthly and yearly appraisals** for faculty members. This dual-layered appraisal mechanism enables timely monitoring of academic activities, facilitates early identification of gaps, and promotes accountability and excellence in academic delivery.

- **Monthly Appraisal** focuses on short-term teaching effectiveness, syllabus progress, student engagement, and participation in academic development activities. It serves as a feedback mechanism for immediate corrective actions.
- **Yearly Appraisal** is a comprehensive performance review that encompasses teaching outcomes, research contributions, participation in FDPs, mentorship, administrative responsibilities, and student feedback. This long-term evaluation supports faculty development planning, recognition, and promotions.

Table No.8.2.2: Monthly Appraisal Form



GIET/UTR/2024/Monthly Self-Assessment Form_ Faculty

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)
(Established Vide Odisha Act 23 of 2018, Included by UGC, New Delhi, and Approved by AICTE, ICAR, INC, DSIR, New Delhi)
Gunupur - 765022, Dist.- Rayagada, Odisha, India
www.giet.edu

SCHOOL OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF BIOTECHNOLOGY

Faculty Self-Assessment for the Month of August/ 2024

01. General Information:

(a) Emp. Code : 196
(b) Name in full (in block letters) : DR. DIPTIKANTA ACHARYA
(c) Department : BIOTECHNOLOGY
(d) Vidwan ID : 178648

02. Academic Qualifications:

Qualification	Year of passing	Institution
UG : B.Sc	2003	Fakir Mohan University
PG : Biotechnology	2005	Fakir Mohan University
Ph.D : Biotechnology	2021	Berhampur University

(a) Additional Qualifications / Fellowships/Memberships/certificate courses: : M.Phil Biotechnology, M.Tech Environmental Engineering ICAR-NET, ISTE, IE, Odisha Biodiversity Conservation, Microbiologist Society of India
(b) Area of specialization, if any : Nanobiotechnology and Nanomedicine, Molecular Biology and Biochemistry and Genetic Engineering
(c) Date of Joining : 20th March 2006
(d) Present designation and date of Appointment to that designation : Assistant Professor
(e) Last Increment Effected Date : October, 2024

03. Experience :

(a) Industrial experience if any : NA
(b) Teaching experience total : 18 Years 7 Months

Name of the college	From (Date/Month/Year)	To (Date/Month/Year)	Experience in years
GIET University	20/03/2006	Till date	18 Years 8 Months
Other Colleges / Organizations			

GIET/UTR/2024/Monthly Self-Assessment Form_ Faculty

PART - A

A1. Student feedback: (Theory subjects only) - 20 M

S. No	Year-Sem-Branch-Sec	Subject Name	No.of students	Percentage	Average %	Self Assessment Marks
1	2023-2027-3rd-B.Tech Biotech	Biochemistry	56	99.57	98.96	20
2	2022-2026-5th-B.Tech Biotech	Genetic Engineering and r-DNA Technology	75	97.32		
3	2023-2025.3rd-M.Sc LS (PS)	Plant Metabolism	02	100		
4						
5						
6						
7						
8						

>=90 &<100 = 20
>=80&<90 = 15
>=70&<80 = 10
>=60&<70 = 05

A2. Subjects Average Pass Percentage: - 20 M

S. No	Subject Name	Year-Sem-Branch-Sec	No of students appeared (A)	Passed (B)	Pass Percentage (B/A*100)	Average %	Self Assessment Marks
1	End semester exam not conducted for the current session						
2							
3							
4							
5							
6							
7							
8							

>= 90 & <100 = 20
>= 80&<90 = 15
>=70&<80 = 10
>=60&<70 = 05

A3. Average Academic Classes (Theory only): - 10 M

S. No	Subject Name	Year-Sem-Branch-Sec	No. of periods as per lesson plan (A)	No. of periods conducted (B)	Percentage of classes taken in allotted subjects (B/A*100)	Average %	Self Assessment Marks
1	Biochemistry	2023-2027-BT	12 class per month	12	100	100	10
2	Genetic Engineering and r-DNA Technology	2022-2026	12 class per month	12	100		
3	Plant Metabolism	2023-2025	12 class per month	12	100		

GIET/UTR/2024/Monthly Self-Assessment Form_ Faculty

4	HCT Lab	2023-2027-BT	12 class per month	12	100		
5	GBET Lab	2022-2026	12 class per month	12	100		
6							
7							
8							

>=100 = 10
>=90&<100 = 7
>=80&<90 = 5
>=70 = 0

PART – B

B1. Workshops, Teaching-Learning-Evaluation Technology Programs, Faculty Development Programs: STTP (Short term training programs) attended, Online Certificate courses. - 10 M

Sl. No	Program	Duration	Date & Place	Organized by	Achievement
1	Attended the FDP on 'Advancing Environmental Sustainability: Integrated Approaches to Decarbonization and Wastewater Treatment (AWS TAOWT-2024)' organized by, from	One Week	9th to 13th September, 2024, Haldia, Hengal	Haldia Institute of Technology, Haldia, West Hengal.	
2					

* Two per year out of which one should be at a venue above 200kms from the University preferably NITs/Reputed Universities/IITs (MOOCS/SWAYAM/NPTEL in case of online certification)

B2. Patents / Trademarks /Design etc., applied /Published / Granted - 10 M

Sl. No	Name of the patent (National / International)	Name of the Principal Investigator	My role in patent (Ind. / th Jnt. etc.)	Date of application / publication Granted	Publication status with file No. (Applied / Published) OR (Commercialized Granted	Obtained Self-Assessment Marks (Maximum Marks 10)
1	Submitted two patents	Dr. Diptikanta Acharya	1st		Yet granted (Be-)	
2						
	For 1st and 2nd author role = 5 For publication = 3 For grant & commercialization = 10		For other roles = 2 For publication = 2 For grant & commercialization = 8			

B3. Details of research project proposals sent/ongoing for grants / sanctions & grants obtained. - 10 M
(Enclose Copy as proof)

Sl. No	Title of the proposal with file No.	Funding agency	Name of the Principle Investigator	My role in PI / Co-PI	Applied Amount	Applied Date	Present status	Obtained Self-Assessment Marks (Maximum Marks 10)
1	Development and Formulation of a Yield-Oriented Fertilizer	MSME, GOI	Dr. Diptikanta Acharya	Mentor	Applied	02.10.2024	Qualified first stage of screening	

GIET/UTR/2024/Monthly Self-Assessment Form_ Faculty

	Based Topical Ointment for the Treatment of Osteoporosis						
2	D-Lactic Acid for Bioplastic Production from Sugarcane	MSME, GOI	Dr. Diptikanta Acharya	Mentor	Applied	02.10.2024	Qualified first stage of screening

For sanction of grants for more than Rs.50 LAKHS – 10
For sanction of grants for between Rs. 30 LAKHS to Rs. 50 Lakhs – 8
For sanction of grants for between Rs. 20 LAKHS to Rs. 30 Lakhs – 5
For sanction of grants for less than Rs.30 LAKHS = 3
(Only for research grants)

For sanction of grants for more than Rs.50 LAKHS – 8
For sanction of grants for between Rs. 30 LAKHS to Rs. 50 Lakhs = 5
For sanction of grants for between Rs. 20 LAKHS to Rs. 30 Lakhs – 3
For sanction of grants for less than Rs.30 LAKHS = 2
[Type of grants: MODROBS / Conference / Seminar / Infrastructure based]

B4. Research Publications and Academic Contributions: - 10 M

S. No	Type of Research Papers	No. of Papers	Maximum Self-Assessment Marks	Obtained Self-Assessment Marks (Maximum Marks 10)
1	1 Scopus/SCI indexed papers/Chapters/Book		10	
2	1 National/International Journals(Non Paid)		07	
3	1 Reprint conference Papers		05	
4	1 Journal/Conference Papers		05	
5	No Journal / Conference Papers		00	

B4. a) Scopus/SCI indexed Journals papers:

S. No	Journal details and title with Page No's	ISSN/ SCOPUS No.	Whether peer reviewed impact Factor, if any	Specify Author 1/ Author 2 / Author 3
1				
2				

B4. b) National /International Journals (Non Paid):

S. No	Journal details and title with Page No's	ISSN/ SCOPUS No.	Whether peer reviewed impact Factor, if any	Specify Author 1/ Author 2 / Author 3
1				
2				

B4. c) Reputed Conference Papers:

S. No	Title with Page No's	International / National Conference	Details of Conference	Specify Author 1/ Author 2 / Author 3

1				
2				

B4. d) Journal / Conference Papers:

S. No	Title with Page No's	International / National Journals Conference	Details of Journal / Conference	Specify Author 1/ Author 2 / Author 3
1				
2				

B5. Proctoring Students Average Value additions: - 10 M

S. No	No. of students allotted for proctoring	Year-Sem-Branch-Sec	No. of students participated in Paper presentations/Posters presentations/Technical exhibitions etc outside the campus (A)	No. of students won prizes (B)	percentage (B/A)*100	Average %	Self-Assessment Marks
1							
2						For Merely Participation = 5 For winning prize = 5 Nil = 0	
3							
4							
5							

*** 06 different students in a semester to be participated**

Staff Appraisal – Points Earned:

PART A	Students feedback % (20M)	
	Subjects Average Pass % (20M)	
	Average Academic Class % (10M)	
	Sum of A	
PART B	Workshops/ STTP/ FDP/ Online course (10M)	
	Patents / Trademarks /Design etc., applied /Published / Granted (10M)	
	Details of research project proposals sent/ongoing for grants / sanctions & grants obtained.	
	Research Publications and Academic Contributions (10M)	
	Proctoring Students Average Value additions % (10M)	
	Sum of B	
TOTAL SUM (A + B)	Total out of (100 M)	

PART - C

C1. Ph.D. Guidance: (Ph. D holders only)

S. No	Name of the Scholar	Area of Research	Ph.D Registration No	Status
1	Mr. Punyasloka Sahu	Ethnobotany and Biodiversity	20SPHY0002	Ongoing
2	Mr. Chinmay Dhal	Ecophysiology and Phytoremediation	20SPHBO007	Ongoing
3	Mr. sangram Keshari Samal	Microbial Biotechnology	21SPHBT002	Ongoing
4	Mr. Raju Rao Reddi	Nanobiotechnology	19WPHBT003	Ongoing
5				

C2. Details of any consultancy work / extension activity undertaken: (Enclose Copy as proof)

S. No	Type of consultancy work (Academic/Industrial)	Name of the consultancy project	Date & Duration	Total cost of the project	Revenue generated (In INR)
1					
2					
3					

C3. Linkages/ MoUs with institutions/industries for internship on-the job Training, project work, sharing of research facilities etc.

S. No	Name of the Organisation	Nature of linkages	No. of faculty /students benefited	Date	Duration
1					
2					

3					

C4. Industrial Visits Arranged for the Students

S. No	Name of the Organisation visited	Students got exposed to which area of their study	No. of faculty /students benefited	Date of Visit	Remarks
1					
2					
3					

C5. Number of Leaves availed:

CL	AL	OD	Any other Leave
02			

C6. Additional responsibilities in the Department / University:

S. No	Responsibility	Assigned by	Duration	Outcome
1	M.Tech Coordinator (Biotech and Chem. Eng)	Central	2019	
2	Exam Coordinator	Department	2013	
3	NBA Coordinator	Department	2019	
4	Nodal officer for Student Credit Card system under Govt. of West Bengal	Central	2019	
5	Proctor	Central	2024	
6	Dept. EDP Coordinator	Department	2019	
7				
8				

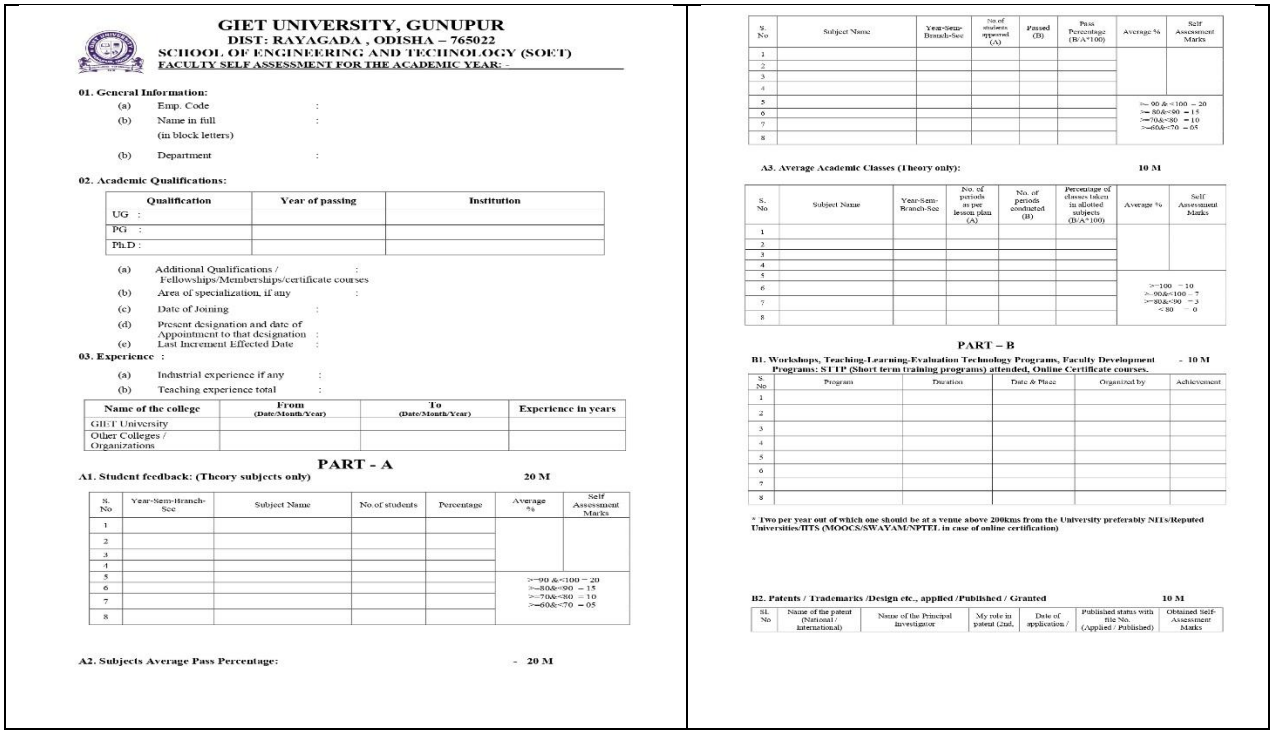
Bidhikanta Jahangir

Date: 10.11.2024

Signature of Faculty

Note: Faculty members are required to share the soft copy of the filled form along with the supporting documents to their concerned HoD or Dean of School or Principal and HR

Table No.8.2.3: Yearly Appraisal Form



GIET UNIVERSITY, GUNUPUR
DIST: RAYAGADA , ODISHA – 765022
SCHOOL OF ENGINEERING AND TECHNOLOGY (SOET)
FACULTY SELF ASSESSMENT FOR THE ACADEMIC YEAR: -

01. General Information:

(a) Emp. Code :
(b) Name in full :
(in block letters)
(b) Department :

02. Academic Qualifications:

Qualification	Year of passing	Institution
UG :		
PG :		
Ph.D :		

(a) Additional Qualifications / Fellowships/Memberships/certificate courses :
(b) Area of specialization, if any :
(c) Date of Joining :
(d) Present designation and date of Appointment to that designation :
(e) Last Increment Effected Date :

03. Experience :

(a) Industrial experience if any :
(b) Teaching experience total :

Name of the college	From (Date/Month/Year)	To (Date/Month/Year)	Experience in years
GIET University			
Other Colleges / Organizations			

PART - A

A1. Student feedback: (Theory subjects only) 20 M

S. No	Year-Sem-Branch-Sec	Subject Name	No of students	Percentage	Average %	Self Assessment Marks
1						
2						
3						
4						
5					>=90 &<100 – 20 >=80&<90 – 15 >=70&<80 – 10 >=60&<70 – 05	
6						
7						
8						

A2. Subjects Average Pass Percentage: - 20 M

S. No	Subject Name	Year-Sem-Branch-Sec	No of students appeared (A)	Passed (B)	Pass Percentage (B/A*100)	Average %	Self Assessment Marks
1							
2							
3							
4							
5						>= 90 &<100 – 20 >= 80&<90 – 15 >=70&<80 – 10 >=60&<70 – 05	
6							
7							
8							

A3. Average Academic Classes (Theory only): 10 M

S. No	Subject Name	Year-Sem-Branch-Sec	No. of periods as per lesson plans (A)	No. of periods conducted (B)	Percentage of classes taken in allotted subjects (B/A*100)	Average %	Self Assessment Marks
1							
2							
3							
4							
5							
6							
7						>=100 – 10 >=90&<100 – 7 >=80&<90 – 3 <80 0	
8							

PART – B

B1. Workshops, Teaching-Learning-Evaluation Technology Programs, Faculty Development Programs: STTP (Short term training programs) attended, Online Certificate courses. - 10 M

S. No	Program	Duration	Date & Place	Organized by	Achievement
1					
2					
3					
4					
5					
6					
7					
8					

*** Two per year out of which one should be at a venue above 200kms from the University preferably NITs/Reputed Universities/IITS (MOOCS/SWAYAM/NPTEL in case of online certification)**

B2. Patents / Trademarks /Design etc., applied /Published / Granted 10 M

Sl. No	Name of the patent (National / international)	Name of the Principal Investigator	My role in patent (2nd,	Date of application /	Published status with file No. (Applied / Published)	Obtained Self-Assessment Marks

			3rd , 4th etc.,)	publication granted	OR If Commercialized fund generated (Rs:-)	(Maximum Marks 10)
1						
2						
	For 1st and 2nd author role For Publication = 5 For grant & commercialization = 10		For other roles For Publication = 2 For grant & commercialization = 5			

B3. Details of research project proposals sent/ongoing for grants / sanctions & grants obtained. (Enclose Copy as proof) 10 M

Sl. No	Title of the proposal with file No.	Funding agency	Name of the faculty applied as PI	My role PI / CO-PI	Applied /sanctioned amount	Applied Date	Present status	Obtained Self-Assessment Marks (Maximum Marks 10)
1								
2								
	For sanction of grants for more than Rs.50 LAKHS = 10 For sanction of grants for between Rs. 30 LAKHS to Rs. 50 Lakhs = 8 For sanction of grants for between Rs. 20 LAKHS to Rs. 30 Lakhs = 5 For sanction of grants for less than Rs.80 LAKHS = 3 (Only for research grants)		For sanction of grants for more than Rs.50 LAKHS = 8 For sanction of grants for between Rs. 30 LAKHS to Rs. 50 Lakhs = 5 For sanction of grants for between Rs. 20 LAKHS to Rs. 30 Lakhs = 3 For sanction of grants for less than Rs.30 LAKHS = 2 [Type of grants: MODROBS / Conference / Seminar / Infrastructure based]				

B4. Research Publications and Academic Contributions: - 10 M

S. No	Type of Research Papers	No. of Papers	Maximum Self-Assessment Marks	Obtained Self-Assessment Marks (Maximum Marks 10)
1	1 Scopus/SCI indexed papers/Chapters/Book		10 M	
2	1 National/International Journals(Non Paid)		07 M	
3	1 Reputed conference Papers		05 M	
4	1 Journal/Conference Papers		05 M	
5	No Journal / Conference Papers		0 M	

B4. a) Scopus/SCI indexed Journals papers:

S. No	Journal details and title with Page No's	ISSN/ SCOPUS No.	Whether peer reviewed impact Factor, if any	Specify Author 1/ Author 2 / Author 3
1				
2				

B4. b) National /International Journals (Non Paid):

S. No	Journal details and title with Page No's	ISSN/ SCOPUS No.	Whether peer reviewed impact Factor, if any	Specify Author 1/ Author 2 / Author 3
1				
2				

B4. c) Reputed Conference Papers:

S. No	Title with Page No's.	International / National Conference	Details of Conference	Specify Author 1/ Author 2 / Author 3
1				
2				

B4. d) Journal / Conference Papers:

S. No	Title with Page No's.	International / National Journals Conference	Details of Journal / Conference	Specify Author 1/ Author 2 / Author 3
1				
2				

B5. Proctoring Students Average Value additions: 10 M

S. No	No. of students allotted for proctoring	Year-Sem-Branch-Sec	No. of students participated in Paper presentations/Posters presentations/Technical exhibitions etc outside the campus (A)	No. of students won prizes (B)	percentage (B/A)*100	Average %	Self-Assessment Marks
1							
2						For Merely Participation = 5 For winning prize = 5 Nil = 0	
3							
4							
5							

*** 06 different students in a semester to be participated**

Staff Appraisal Points Earned:

PART A	Students feedback % (20M)	
	Subjects Average Pass % (20M)	
	Average Academic Class % (10M)	
	Sum of A	
PART B	Workshops/ STTP/ FDP/ Online course (10M)	
	Patents / Trademarks /Design etc., applied /Published / Granted (10M)	
	Details of research project proposals sent/ongoing for grants / sanctions & grants obtained. (10M)	
	Research Publications and Academic Contributions (10M)	
	Proctoring Students Average Value additions % (10M)	
	Sum of B	
TOTAL SUM (A +B)	Total out of (100 M)	

PART - C

C1. Ph.D. Guidance: (Ph. D holders only)

S. No	Name of the Scholar	Area of Research	Ph.D Registration No	Status
1				
2				
3				
4				
5				

C2. Details of any consultancy work / extension activity undertaken: (Enclose Copy as proof)

S. No	Type of consultancy work (Academic/Industrial)	Name of the consultancy project	Date & Duration	Total cost of the project	Revenue generated (In INR)
1					
2					
3					

C3. Linkages/ MoUs with institutions/industries for internship on-the job Training, project work, sharing of research facilities etc.

S. No	Name of the Organisation	Nature of linkages	No. of faculty /students benefited	Date	Duration
1					
2					
3					

C4. Industrial Visits Arranged for the Students

S. No	Name of the Organisation visited	Students got exposed to which area of their study	No. of faculty /students benefited	Date of Visit	Remarks
1					
2					
3					

C5. Additional responsibilities in the Department / University:

S. No	Responsibility	Assigned by	Duration	Outcome
1				
2				
3				
4				
5				
6				
7				
8				

Date: **Signature of Faculty**

Performance Based Appraisal – Points Earned

PART A	Students feedback % (20M)	
	Subjects Average Pass % (20M)	
	Average Academic Class % (10M)	
	Sum of A	
PART B	Workshops/ STTP/ FDP/ Online course (10M)	
	NPTL Course(10M)	
	Patents / Trademarks /Design etc., applied /Published / Granted (10M)	
	Details of research project proposals sent/ongoing for grants / sanctions & grants obtained. (10M)	
	Research Publications and Academic Contributions (10M)	
	Proctoring Students Average Value additions % (10M)	
	Sum of B	
TOTAL SUM (A +B)	Total out of (100 M)	

Remarks of the HOD:

Signature

Remarks of the Dean / Principal:

8.3 . Improvement in Faculty Qualification/Contribution (15):

Table No.8.3.1: Improvement in qualification and publications

Item	CAYm1	CAYm2	CAYm3
No. of faculty members with Ph.D. degree	11	11	8
No. of publications in peer reviewed journals	23	19	10
No. of publications in conferences	5	5	4

8.4 Improvement in Academic Performance (10):

Table No.8.4.1: Improvement in academic performance

Item	CAYm1	CAYm2	CAYm3
Academic Performance Index(API)of the First- Year Students in the Program (Refer to section 4.3)	7.9	7.8	7.7
Academic Performance Index of the Second-Year Students in the Program (Refer to section 4.4)	7.9	7.7	7.8
Academic Performance Index of the Third Year Students in the Program (Refer to section 4.5)	7.8	7.7	7.6

Criterion 9: Student Support System and Governance (120)

9.1. First-Year Student-Faculty Ratio (FYSFR) (05)

(Data for first-year courses to calculate the FYSFR)

Table No. 9.1.1: FYSFR details.

Year	Sanctioned intake of all UG programs (S4)	No. of required faculty (RF4 = S4/20)	No. of faculty members in Basic Science Courses & Humanities and Social Sciences including Management courses (NS1)	No. of faculty members in Engineering Science Courses (NS2)	Percentage = No. of faculty members ((NS1×0.8) +(NS2×0.2))/(No. of required faculty (RF4)); Percentage = ((NS1*0.8) +(NS2*0.2))/RF
CAY 2024-25	1020	51	58	20	((58×0.8) + (20×0.2)) / 51 = 98.82%
CAYm1 2023-24	1050	53	59	21	((59×0.8) + (21×0.2)) / 53 = 96.98%
CAYm2 2022-23	990	50	57	19	((57×0.8) + (19×0.2)) / 50 = 98.80%
				Average Percentage	**98.20%**

Note:

> 90% of faculty members; 05 marks.
> 80% to < 90 of faculty members; 04 marks.
> 70% to < 80 of faculty members; 03 marks.
> 60% to < 70 of faculty members; 02 marks.
> 50% to < 60 of faculty members; 01 mark.
< 50% of faculty members; 00 mark.

9.2. Mentoring System (05)

(Type of mentoring: Professional guidance/career advancement/course work specific/ laboratory specific/all-round development. Number of faculty mentors: Number of students per mentor: Frequency of meeting:
The institution should report the details of the mentoring system, its implementation and effectiveness through impact studies, services both online and physical, and the mentoring of seniors (final year students) to juniors (freshmen) if any, etc.).

Type of Mentoring: All-round development (academic guidance, career counselling, course-specific, laboratory-specific, emotional and psychological support)

Number of Faculty Mentors: Sufficient to maintain a 1:20 mentor-mentee ratio

Number of Students per Mentor: 20

Frequency of Meetings: Regularly scheduled one-on-one sessions (minimum once a month) and additional meetings as required

Mode of Mentoring: Both physical and online platforms

Peer Mentoring: Final-year students mentor junior students as part of departmental clubs and student chapters

A. Mentoring System - Implementation

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University) has implemented a structured and comprehensive mentor-mentee system that plays a pivotal role in the academic and emotional well-being of its students. The system is institutionalized as follows:

- **Mentor/Proctor Allotment:** Every student is assigned a faculty mentor/proctor at the beginning of the academic year. Each mentor/proctor is responsible for guiding up to 20 students, ensuring individual attention and support.
- **Structured Mentoring:** Mentors/proctors meet with students regularly to track their progress in academics, attendance, co-curricular, and extracurricular activities. These sessions are recorded through the institutional ERP system.
- **Monitoring by Coordinators or Supervisors:** A **Mentor Coordinator/Proctor Supervisor** is appointed in each department to monitor, support, and facilitate the mentoring process at the departmental level. To ensure consistency and overall quality, a **Chief Proctor Supervisor** oversees the activities of all departmental proctor supervisors and ensures that the mentoring framework is uniformly and effectively implemented across the university.
- **ERP-Based Documentation:** Performance tracking and mentoring feedback are documented through ERP, ensuring transparency and continuity.
- **Parental Engagement:** Periodic parent–mentor/proctor meetings are held to discuss student progress. Mentors/proctors maintain direct communication with parents, sharing updates and addressing concerns.

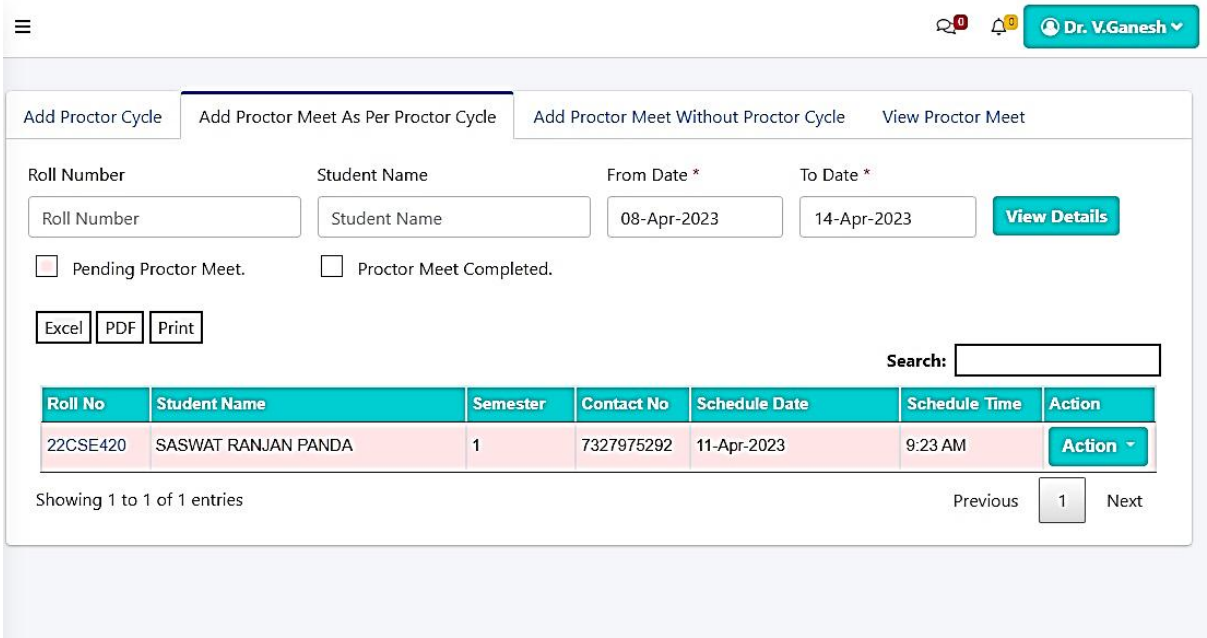


Figure No. 9.2.1: Proctor-student meet: View student as per cycle plan.

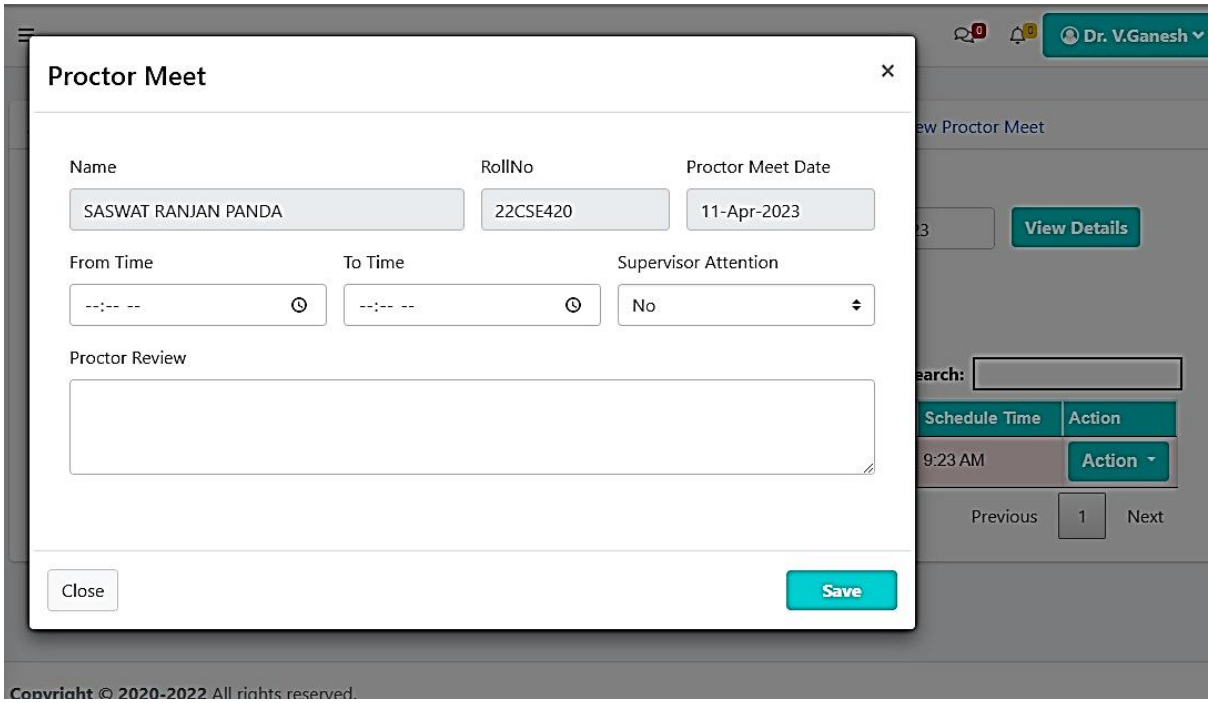


Figure No. 9.2.2: Proctor-student interaction details.

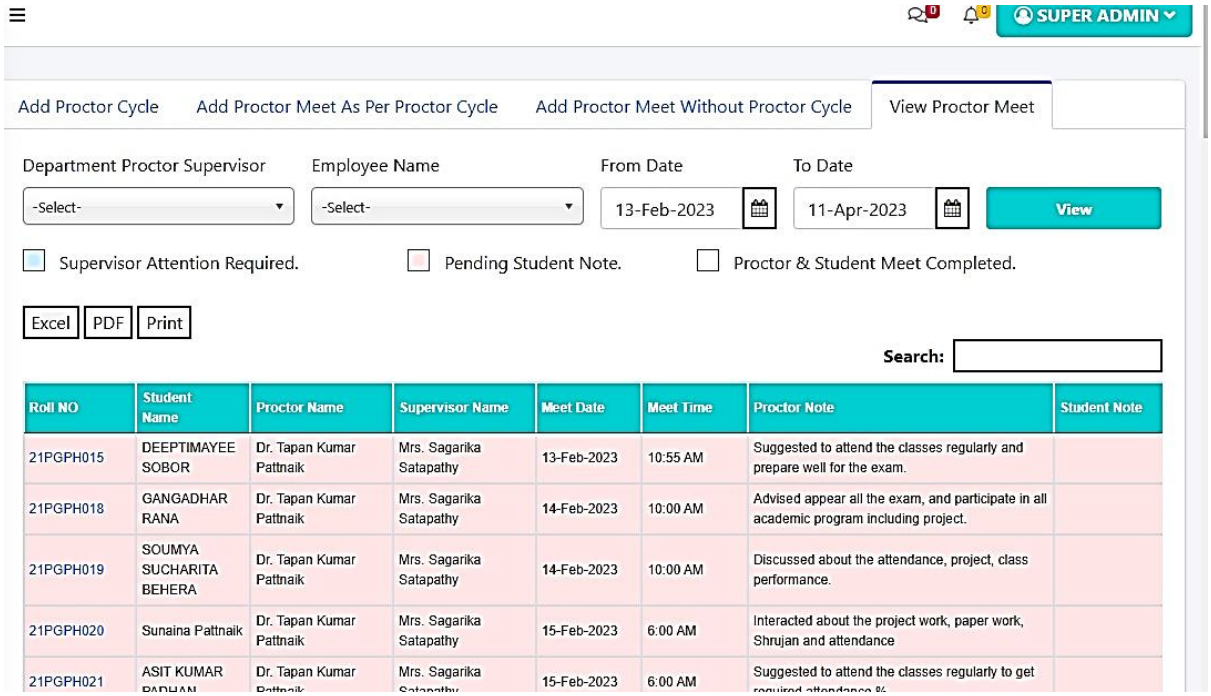


Figure No. 9.2.3: View student interaction details with a proctor.

B. Effectiveness of the Mentoring System

The mentoring system has demonstrated significant positive outcomes in terms of both academic success and personal development:

- **Academic Support:** Mentors/proctors guide students in understanding course content, improving attendance, and aligning their learning goals with long-term career objectives. Students with poor attendance or academic struggles receive timely intervention and counselling.

- **Psychological & Emotional Well-being:** Faculty mentors/proctors act as trusted confidants, creating a secure environment for students to discuss personal and academic issues. This has helped reduce stress and improve emotional resilience among students.
- **Career Advancement & Skill Development:** Mentors/proctors actively encourage participation in value-added programs such as workshops, conferences, training programs, and industry exposure opportunities.
- **Student Feedback & Outcome:** Impact studies through feedback mechanisms show a high level of student satisfaction, improved academic performance, and increased involvement in institutional activities.
- **Peer Mentoring:** Senior students (especially final-year) provide informal mentoring to their juniors through department clubs and student chapters, helping create a collaborative and inclusive learning environment.
- **Holistic Growth:** The mentor-mentee relationship fosters a culture of openness, trust, and mutual respect, contributing to the overall development of students—academically, emotionally, and professionally.

GIET University's dedication to student-centric education is demonstrated by this strong mentoring program. It guarantees that students have the self-assurance and life skills needed to succeed in both their personal and professional lives, in addition to the academic information they need.

9.3. Feedback Analysis (10)

9.3.1. Feedback on Teaching and Learning Process and Corrective Measures Taken, if any (05)

(Provide details of the feedback collection process on TLP, average percentage of students who participate; Specify the feedback analysis process; Basis of reward/ corrective measures during the assessment period. Specify the number of corrective measures taken. Exhibit the details of analysis done.)

A. Feedback Questionnaire Used

The feedback on the Teaching and Learning Process (TLP) is collected using a well-structured questionnaire comprising both quantitative ratings and qualitative comments. The questionnaire is designed to evaluate the following parameters:

- Teaching Effectiveness and Engagement
- Curriculum Relevance and Industry Alignment
- Practical Knowledge and Skill Development
- Availability and Use of Learning Resources
- Responsiveness and Support from Faculty
- Effectiveness of Student Support Services

Sample Feedback form is attached below:

GIET UNIVERSITY GUNUPUR

HUMAN RESOURCES DEPARTMENT

DATE OF FEED BACK							
		Excellent	Very Good	Good	Fair	Poor	
Teacher is punctual and regular							
Level of preparation in the subject							
Teacher speaks clearly and audibly							
Teacher uses Black/White Board ,Power point Presentation and other online tools properly							
Teacher provides examples of concept /Principle	A						
Teacher answers the questions and clarifies the doubts on the subject							
Teacher makes the class interesting , interactive and simulates interest on the subject							
Teacher maintains discipline in the class							
Teacher offers assistance and counselling as and when needed							
Teacher is impartial to all the students							
NO. OF STUDENT							
	TOTAL	0.00					

COMMENTS

INDUSTRY FEEDBACK FORM- GIET UNIVESITY

We shall very much appreciate and be grateful to you if you can spare some of your valuable time to fill up this feedback form. It will help us to improve the University further and give you better employees in future.

Tick the number that best describes your level of satisfaction at each question:

1 - Far from Satisfied 2 - Not satisfied 3 – Satisfied 4 – Happy 5 - Very Happy

How satisfied are you with the student/s work performance in each of these areas:	**1**	**2**	**3**	**4**	**5**
1. General communication skills					
2. Developing practical solutions to work place problems					
3. Working as part of a team					
4. Creative in response to workplace challenges					
5. Their planning and organization skills					
6. Self-motivated and taking on appropriate level of responsibility					
7. Open to new ideas and learning new techniques					
8. Using technology and workplace equipment					
9. Ability to contribute to the goal of the organization					
10. Technical knowledge/skill					
11. Ability to manage/leadership qualities					
12. Innovativeness, creativity					
13. Relationship with seniors/peers/subordinates					
14. Involvement in social activities					
15. Ability to take up extra responsibility					
16. Obligation to work beyond schedule if required					

Please write Comments/Suggestions to improve Academics/Curriculum and Ambience of the University

Name: Mobile No:

Designation: Email:

Organization Name:

Location: **Signature**

B. Methodology for Feedback Analysis and Its Effectiveness

Modes of Collection:

- Online Platforms: Google Forms deployed by the HR Department after one month from the commencement of classes.
- Direct Interaction: Feedback is also gathered orally during mentoring sessions, alumni meetups, and discussions with industry experts.

Stakeholders Involved:

- Students with ≥80% attendance
- Employers (via placement feedback)
- Alumni and Industry Representatives (during interactions)

Frequency:

- Once per semester
- Additional feedback during project evaluations, internships, and industrial visits

Participation Statistics:

Academic Year	Total Students	Feedback Received	Participation (%)
2023–24	3640	2912	80
2022–23	2935	2377	81
2021–22	2475	2128	86

Efforts to Improve Participation:

- Awareness campaigns conducted by class teachers and proctors

Analysis Methodology:

- Consolidation and graphical representation of data using MS Excel

Categorization of feedback:

- Positive Feedback: Best practices to be continued
- Areas for Improvement: Moderate issues needing attention
- Critical Concerns: Immediate interventions required

The systematic analysis enables informed decision-making and timely interventions, leading to enhanced teaching outcomes and student satisfaction.

C. Record of Corrective Measures Taken and Impact

Based on the feedback, the institution has implemented several corrective and improvement measures, including:

1. Faculty Development Programs (FDPs):
   - Sessions on Outcome-Based Education (OBE), digital tools, and innovative pedagogies
   - Conducted 12 FDPs in the last three years
2. Curriculum and Content Revisions:
   - Integrated emerging topics such as AI, Data Analytics, Sustainability
   - Introduced industry-aligned electives
3. Learning Support Enhancements:
   - Encouraged MOOCs via NPTEL, SWAYAM, Coursera

- Offered credit transfers for certified online courses

4. Academic Support for Weak Students:
   - Conducted remedial and bridge courses
   - Personal mentoring by faculty members
5. Industry Integration:
   - Increased project-based learning
   - Facilitated internships and industrial visits
6. Infrastructure Improvements:
   - Upgraded smart classrooms and laboratory equipment
   - Expanded digital library access and study spaces
7. Faculty Accountability:
   - Faculty receiving <80% satisfaction in feedback were counselled and asked for action plans for improvement
   - Monitored progress in the following semester

Conducted workshops for quality Improvement of Faculty Members

9.3.2. Feedback on Academic Facilities (05)

(Provide details of the feedback collection process on facilities, its analysis and corrective actions taken during the assessment period.)

A. Feedback Questionnaire Used

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University) utilizes a comprehensive feedback mechanism to gather insights on academic and associated facilities. Feedback is collected through:

- **Online:** Google Forms distributed to final year students and alumni.
- **Offline:** Printed forms administered to students during department events.
- **Direct Interactions:** Verbal feedback through student council meetings, mentor-mentee sessions, and departmental reviews.

The feedback questionnaire includes parameters such as:

- Quality of teaching and departmental engagement
- Laboratory facilities
- Library resources
- Hostel and canteen amenities
- Campus safety and cleanliness
- ICT facilities and infrastructure

Sample feedback forms:

GIET UNIVERSITY

VISITING ALUMNI FEEDBACK

ESSENTIAL DETAILS

Name			
Date of Birth (DD/MM/YY)	_____ / _____ / _____	Mobile No.	
Year of Passing out		Department	
University Registration No.		Roll No.	
Present Organisation		Designation	
E-mail ID :			
Present Address :			
Permanent Adress :			
Father's Name :		Mobile No.	
Mother's Name :		Mobile No.	

Sl. No.	Statement	Agree	Sometimes	Disagree
1	Do you feel proud to be associated with GIETU as Alumni ?			
2	University organizes various kind of activities for overall development of students ?			
3	Are you willing to contribute in the development of the University ?			
4	University handles Alumni's grievance ?			
5	University is having adequate laboratories and equipment for practical experiences ?			
6	Is education imparted at GIETU is useful and relevant in your present job ?			
7	Have you obtained sufficient technical knowledge (both in theory and practical) ?			

Contd. Pg. 2..

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8	Has the T&P Cell provided ample On Campus and Off Campus Placement opportunities ?			
9	Do you like to join the University Alumni Association ?			
10	Is University providing good hospitality as Alumni after passing out ?			
11	Do you recive regular updates from the University through Mails / Calls Etc. ?			

Most Memorable moment in the University:

_____

_____

_____

Suggestion for improvements:

Departments _____

_____

_____

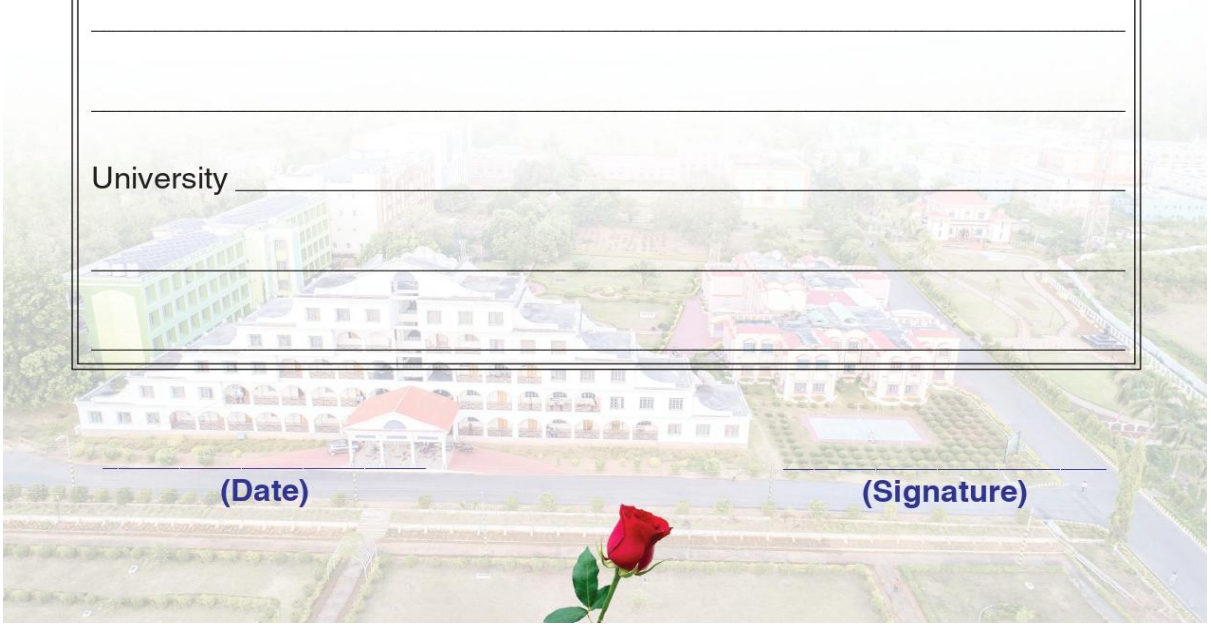
University _____

_____

_____

_____ _____

(Date) **(Signature)**



- End-of-semester reviews
- Post-facility upgrades (e.g., new labs, library systems)
- Special events such as workshops and seminars

Analysis Process:

- Data is compiled by the **Feedback Analysis Committee**.
- Responses are categorized into:
  - **Positive feedback** (highlighting institutional strengths)
  - **Areas needing improvement** (triggering corrective actions)

C. Record of Corrective Measures Taken

Feedback has been crucial in identifying improvement areas, leading to significant corrective actions. The institution maintains a record of issues, actions taken, and outcomes, as summarized below:

Identified Issue	Corrective Action Taken	Outcome
Projector malfunctions in classrooms	Installed new projectors	Improved classroom engagement
Insufficient computers in Lab	Procured more than 300 new computers; upgraded software over last 3 years	Enhanced practical learning sessions
Poor Wi-Fi in hostels	Increased bandwidth; installed additional routers	Better internet access and speed
Inadequate library resources	Added books, digital journals; introduced IP-based intranet journal access	Broader academic resource access
Infrastructure complaints (washrooms, lighting)	Renovated washrooms, improved ventilation, added lighting fixtures	Safer and more comfortable learning spaces

This structured approach ensures continuous enhancement of academic facilities, based on regular, inclusive feedback and timely interventions.

9.4. Training and Placement Support (10)

(Provide details of the training and placement supports, calendar of scheduled training, career guidance and effectiveness of career guidance, industry interaction exclusively for pre-placement/internship/placement/counselling and support for higher study, etc.)

Gandhi Institute of Engineering and Technology University (GIET University), Gunupur, Odisha, has a well-established and dedicated **Training and Placement Cell (T&P Cell)** aimed at enhancing students' employability, preparing them for industry, and supporting them in achieving their career goals. The T&P Cell serves as a vital link between students and recruiters, offering a comprehensive set of services including technical training, soft skills development, career guidance, placement assistance, and support for higher education.

A. Facilities of Training and Placement Cell

The T&P Cell is supported by modern infrastructure and resources, ensuring seamless execution of training and placement activities:

- A dedicated Training and Placement Office with full-time staff.
- Multiple auditoriums equipped with audio-visual facilities:
  - 1 auditorium with 800 seating capacity
  - 3 auditoriums with 450 seating capacity
  - 4 auditoriums with 200 seating capacity
- Designated interview cabins and group discussion rooms.

- Computer laboratories with internet access for placement-related activities such as online assessments.
- Centralized student database with full access for recruiters and staff.

B. Adequate Staff

The T&P Cell is managed by a competent and experienced team comprising:

- A full-time Training and Placement Officer (TPO) with extensive industry experience.
- Departmental faculty coordinators.
- Administrative staff for logistical and communication support.
- Student volunteers for smooth coordination of training sessions and placement drives.

Team Members:

Sl. No.	Officers Name	Designation
1	Dr. N. V. Jagannadha Rao	Placement Advisor
2	Dr. Jyotirmaya Mishra	Prof- In charge, Training and Placement
3	Dr. Sumita Padhi	Deputy Manager – Corporate Relations
4	Mr. Sanjay Kumar Gouda	Placement Officer
5	Mr. B K Karan	Placement Officer
6	Mr. Mohammed Kashif Ahmed	Placement Officer
7	Mr. Manoj Kumar Pradhan	Placement Officer
8	Mr. Sunil Kumar Nanda	Placement Officer
9	Ms. Renuka Mandal	Junior Placement Officer
10	Mr. Rajiv Lochan Padhi	Senior Manager
11	Mr. Sarita Rani Satapathy	Alumni Officer
12	Mr. Preetam Majhi	Placement Executive

C. Pre-placement Training Activities

The T&P Cell organizes regular pre-placement training sessions to prepare students for recruitment processes. Activities include:

- **Aptitude & Reasoning Training:** Conducted by expert trainers from 3rd year onwards to enhance analytical and problem-solving skills.
- **Soft Skills & Communication:** Personality development, presentation skills, group discussion, and interview skills are emphasized from the 2nd year.
- **Technical Training:** Department-specific training sessions, coding bootcamps, and workshops in collaboration with industry partners.
- **Mock Interviews and Resume Building:** Sessions by HR professionals to simulate real interview scenarios and refine CVs.

A well-structured Training Calendar is followed, which aligns with academic schedules and upcoming placement seasons.

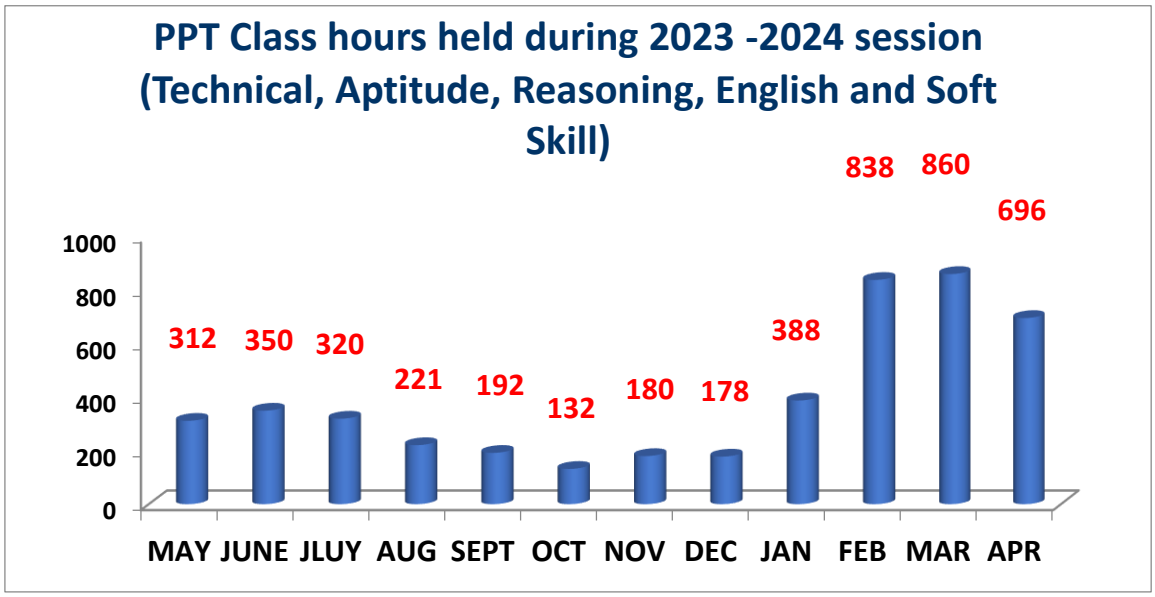
Training Calendar:

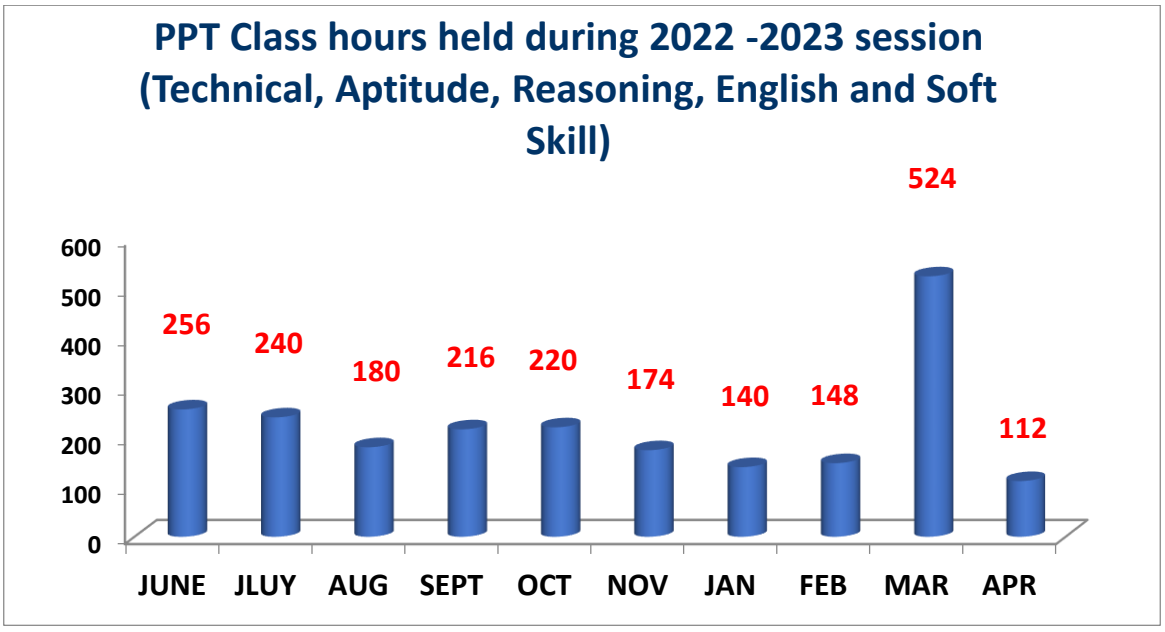
- Placement Cycle: August to April
- Training Periods: June – November and January – April

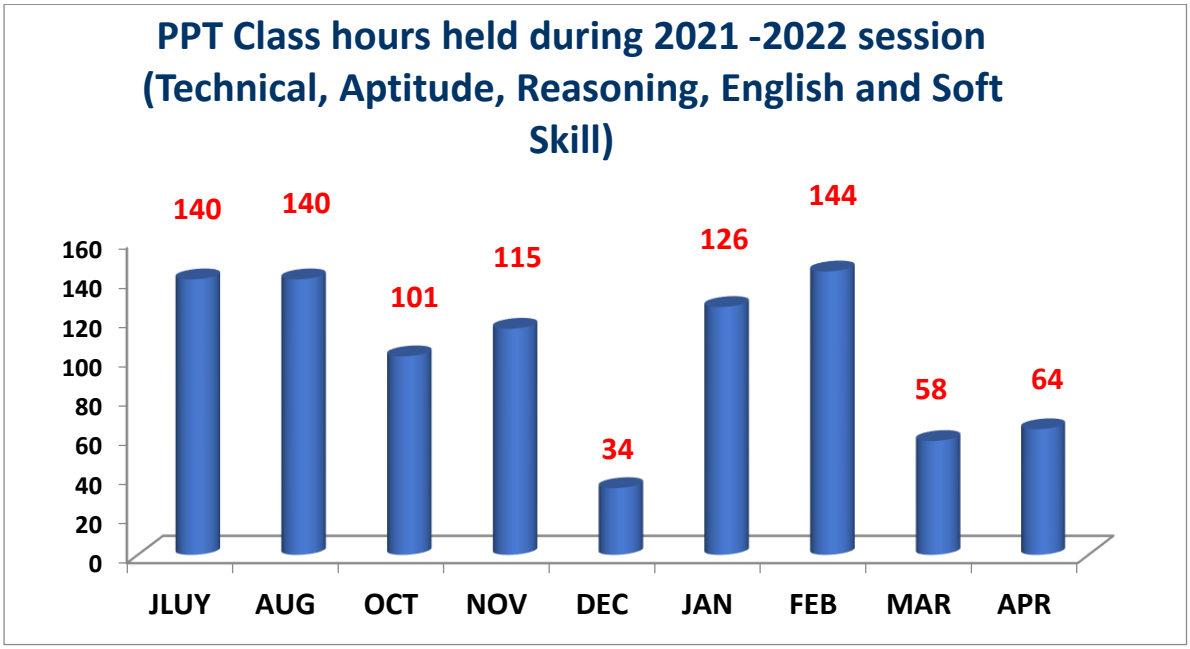
Pre-Placement Training Hours Delivered:

Year	Duration	Total Hours Delivered
2023-24	06.06.2023- 12.11.2023	1885
	18.01.2024- 08.04.2024	2782

2022-23	06.06.2022- 12.11.2022	1286
	18.01.2023- 08.04.2023	924
2021-22	05.07.2021- 15.12.2021	922
	10.01.2022- 09.04.2022	392

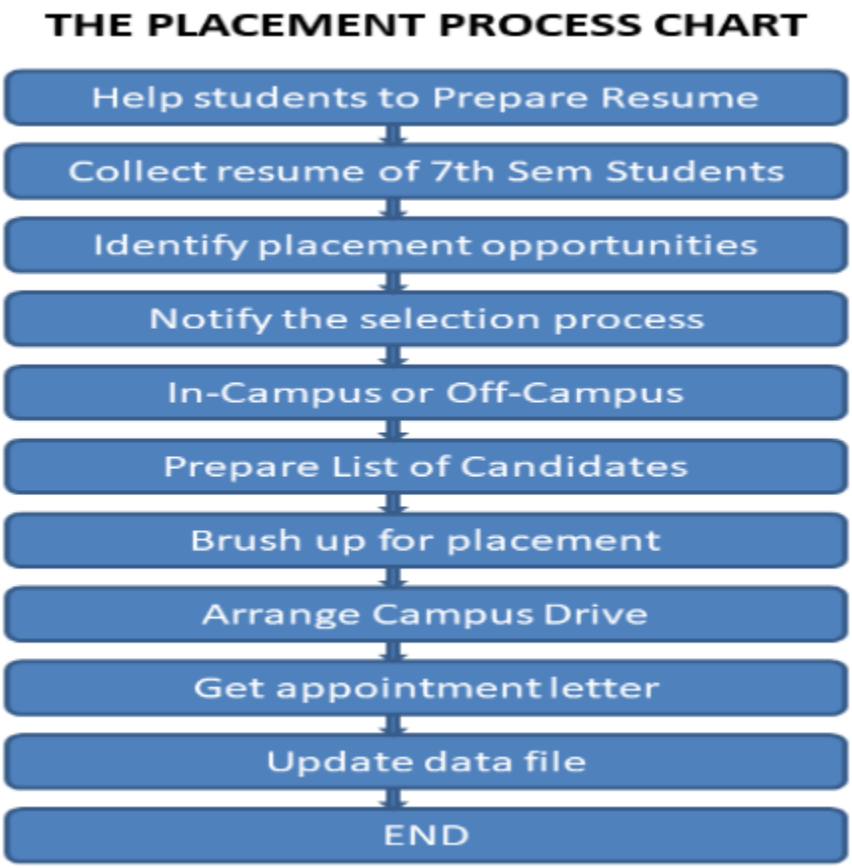






TRAINING PROCESS CHART

Sl No	Year	Training Activities	Training Agency
1	1st Year	Communicative English	External Experts
		Personality Development techniques	External Experts
2	2nd Year	Business English Communication (BEC Vantage)	British Council, Kolkata
		Accent Training	Internal Faculty
		Oracle (SQL / PL SQL) Technology	Internal Faculty
		Summer Training	Visit to Industries
3	3rd Year	Pre Placement Training - Arithmetic, Reasoning, General English	External Experts
		PPT - C, C++, DS, JAVA, DBMS, Linux & OS	Internal Faculty
		GD /PI Techniques, Technology training- Angular React, Node JS, JAVA/ J2EE, Power Builder	External Experts
		Campus Oriented Brush up Sessions	Industry HRs & Experts
		Mock Test / Very Similar Test	Online Web Portal
		Campus Connect Program	Infosys
4	4th Year	Training GAP Analysis	T & P Cell
		Company specifics FAQs - Discussion	External Experts
		HR Meet and Interaction session	Industry Experts
		Recruitment Drives Starts	TCS, Tech Mahindra etc.



D. Career Guidance and Effectiveness

Career counselling is an integral part of the student support system. Activities include:

- **Individual Counselling Sessions:** Provided by faculty mentors and external counsellors to guide students on career options.
- **Workshops/Seminars:** Focused on career opportunities, resume building, interview techniques.
- **Entrepreneurship Support:** Collaboration with the institution's incubation centre to encourage start-up ideas and innovation.

Feedback is regularly collected from students and recruiters to assess and improve the effectiveness of career guidance initiatives.

E. Industry Interaction

To bridge the academia-industry gap, the university encourages strong engagement with industries:

- **Guest Lectures and Expert Talks:** Regularly organized from industry leaders and alumni to share insights on current trends and employability skills.
- **HR Meets and Industry Advisory Sessions:** Annual T&P conclaves with participation from industry leaders, HR managers, and alumni to forecast industry hiring trends.
- **Internship Opportunities:** Facilitated through MoUs with reputed companies to ensure pre-placement exposure.

- **Industry Visits:** Organized to offer real-time exposure to industrial work environments and processes.

F. Support for Higher Studies

GIET University provides dedicated support for students aspiring for higher education:

- Counselling for Higher Education: One-on-one guidance by faculty and external experts regarding courses, institutions, and countries.
- Preparation Support: Coaching sessions for GATE, GRE, TOEFL, IELTS, and other competitive exams.
- Seminars/Webinars: Regularly organized with alumni and academic counsellors to provide insights into study options in India and abroad.
- Library and Digital Resources: Access to preparatory material, past question papers, and online platforms for self-learning.

This comprehensive, structured, and consistent support system helps GIET University students become industry-ready professionals and achieve commendable placements and admissions in top institutions.

9.5. Start-up and Entrepreneurship Activities (05)

(Describe the initiatives, facilities created/utilization and their effectiveness in encouraging students for innovation, entrepreneurship, incubation and start-up. Also, provide the list of beneficiaries.)

The Entrepreneurship Cell / Incubation Cell at ACIC GIETU Foundation consists of the following key components:

ACIC (Atal Community Innovation Center - GIETU Foundation)

- A start-up incubator supporting innovation, entrepreneurship, and skill development.
- Provides mentorship, funding, training, and networking opportunities.
- Supported by Start-up India Seed Fund Scheme (SISFS) and industry-academia partnerships.

E-YUVA BIRAC

- A biotech-focused incubation program funded by BIRAC (Biotechnology Industry Research Assistance Council).
- Supports start-ups in health-tech, bio-engineering, waste-to-energy, and agricultural bio-innovation.
- Provides financial assistance, mentorship, and research infrastructure.

IncubateX

- A specialized incubator supporting textile-based innovations and sustainable manufacturing solutions.
- Focuses on eco-friendly materials, smart textiles, and innovative production techniques.
- Encourages entrepreneurs in the textile and fashion-tech industry.

Key Events & Training Programs Conducted

The following events and training programs have significantly contributed to building entrepreneurial capacity among students:

- **Entrepreneurship Development Program (EDP):** 12-day mentorship-driven start up program with DIC Rayagada and ACIC experts.
- **IDE Boot Camp (AICTE & MIC):** Innovation and design thinking boot camp at Visakhapatnam and Sambalpur.
- **PROGATI (in collaboration with IIT Ropar):** Start-up networking and funding facilitation program.
- **Skill Development Workshop (IIT TIHAN, Hyderabad):** Training on Secure Robotics & Machine Learning (Jan 6–11, 2025).
- **World Wildlife Week:** Awareness drive aligned with SDGs, focusing on biodiversity and sustainability.
- **Catalyst Innovation Fellowship (CIF) Review Meetings:** Periodic reviews to ensure progress and mentorship for fellows.
- **E-YUVA Biotech Innovation Events:** Domain-specific support for biotech start-ups.

Start-ups & Innovations Supported

Catalyst Innovation Fellowship (CIF):

- **Total Fellows Selected:** 3 (2 active, 1 exited)
- **Community Innovator Fellowship (ACIC):**
    1. **Dr. Golmei Langangmeilu** – *Project:* Low-Cost Cotton Biochar Production & Validation.
    2. **Mr. Hemant Kumar Sahoo** – *Project:* Integrated Green Building Design & Construction.

E-YUVA BIRAC Start-ups:

- Focused on biotech innovations in healthcare, bio-engineering, waste management, and agriculture.
- Startups funded and mentored under the E-YUVA program.

Start-up India Seed Fund Scheme (SISFS):

- Multiple early-stage startups incubated and supported with financial aid, mentorship, and product development facilities.
- Planned expansion includes **on boarding 5 new CIF fellows**.

Funding & Financial Assistance

- ₹1.6 lakh sanctioned per CIF fellow for prototype development.
- SISFS-backed funding provided to eligible start-ups.
- BIRAC grants for biotech-based ventures.
- Collaborative industry-academic funding in deep-tech and sustainability domains.

Student Participation and Beneficiaries

- **73 student groups** engaged in **MSME 4.0** entrepreneurial activities.
- **83 students** participated in the **IDE Bootcamp** program.
- **120 students** expressed active interest in **prototype/model design and development**.

Sl. No.	Description	Name	Date
1	Outreach Events	Narasinghamunda	20.01.2022
		Regada	15.02.2022

		Gadiakhola	25.04.2022
		Pagadabili	27.12.2023
		Bijayapur	27.12.2023
		Entimunigaon	24.01.2024
		Jagannathpur	29.01.2024
		Khalagumuda	29.01.2024
		Pradhaniguda	16.02.2024
		Oxypro Pvt. Ltd, Bikrampur	17.01.2025
2	Ideathons	CAMPUS AMBASSADOR with SELCO Foundation	09.11.2023
		StartUp Odisha Yatra 3.0 Boot Camp	14.11.2023
		"SEARCH OF WISDOM" with SELCO Foundation	29.11.2023
		HACK THE HARVEST	20.04.2024
		World Entrepreneurship Day	23.08.2024
		MSME HACKATHON 4.0	29.10.2024 & 30.10.2024
		Pravesh 1.0	27.01.2025
3	Intellectual property Events	World Intellectual Property Day	27.04.2024
4	Capacity Building Programs	Womens' Entrepreneurship Summit- 2023	25.11.2023
		Validictory Function of project "SOCH" based on G20 Nations	02.12.2023
		National Startup Day	16.01.2024
		Innovation Talk Series	02.03.2024
		Rayagada Food Processing Conclave	19.07.2024
		World Youth Skills Day	23.07.2024
		Utkarsh Odisha Conclave 2025	09.01.2025
		3D Printing Workshop	12.08.2023
5	Workshop & Training	National Science Day	28.02.2024
		Workshop on 3D Printing	04.03.2024 to 09.03.2024
		New Ideas and Opportunities for Food Processing Sector in Odisha	29.04.2024 to 30.04.2024
		Subham Bio CNG Pvt. Ltd.	25.02.2023 to 24.02.2024
6	Incubated Startup	Analytics Drift	21.12.2022 to 20.12.2023
		Orifebtextile India private limited	22.12.2022 to 21.12.2023
		Azeedo	6.11.2022 to 05.11.2023
		Fingerprint Digital Media	22.12.2022 to 21.12.2023
		Focalpreneur Technologies & Services Pvt. Ltd.	11.12.2024 to 10.12.2026
		ECHRA Innovations Pvt. Ltd.	08.01.2025 to 07.01.2026
		Biomexia Healthcare Pvt. Ltd.	25.11.2024 to 24.11.2026
		Olemus Bioteck Pvt. Ltd.	28.02.2024 to 27.02.2025
		Purewatt Renewables Pvt. Ltd.	08.04.2024 to 07.04.2025

9.6. Governance and Transparency (25)

9.6.1. Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring (10)

(Provide details of the Institute's strategic plan or Institutional Development Plan (IDP), its approval by the competent authority, and its implementation.)

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University) has a well-defined **Institutional Strategic Plan/Institutional Development Plan (IDP)** that outlines its vision, mission, core values, long-term goals, and strategic objectives. The plan has been developed through extensive consultation with stakeholders, including faculty members, students, administrative staff, alumni, and industry partners.

The Strategic Plan focuses on key areas such as:

- Academic Excellence and Curriculum Development
- Research and Innovation
- Infrastructure and Resource Development
- Student Support and Skill Development
- Community Engagement and Social Responsibility
- Governance and Administrative Efficiency

1. Approval by the Competent Authority:

The Institutional Strategic Plan was formally approved by the **Board of Governors/Academic Council** in February 2019. The approval process included:

- Presentation of the draft plan
- Review by the Internal Quality Assurance Cell (IQAC)
- Incorporation of feedback from stakeholders
- Final ratification by the governing body

2. Implementation Mechanism:

To ensure effective implementation, the institution has established a **Strategic Plan Implementation Committee (SPIC)** or equivalent body. Each strategic objective is broken down into actionable goals with defined timelines and responsible units. The implementation is carried out through:

- Annual operational plans
- Departmental and unit-level targets
- Allocation of budgetary resources
- Training and capacity-building programs
- Integration with the institution’s Performance-Based Appraisal System

3. Monitoring and Evaluation:

A robust **Monitoring and Evaluation (M&E) framework** has been put in place to track progress. This includes:

- Periodic review meetings (quarterly/bi-annual)
- KPI-based performance measurement
- Internal audits and progress reports
- Feedback loops involving all stakeholders
- Mid-term and end-term reviews of the Strategic Plan

The Internal Quality Assurance Cell (IQAC) plays a central role in monitoring the progress and making necessary adjustments to align with emerging challenges and opportunities.

4. Outcome and Impact:

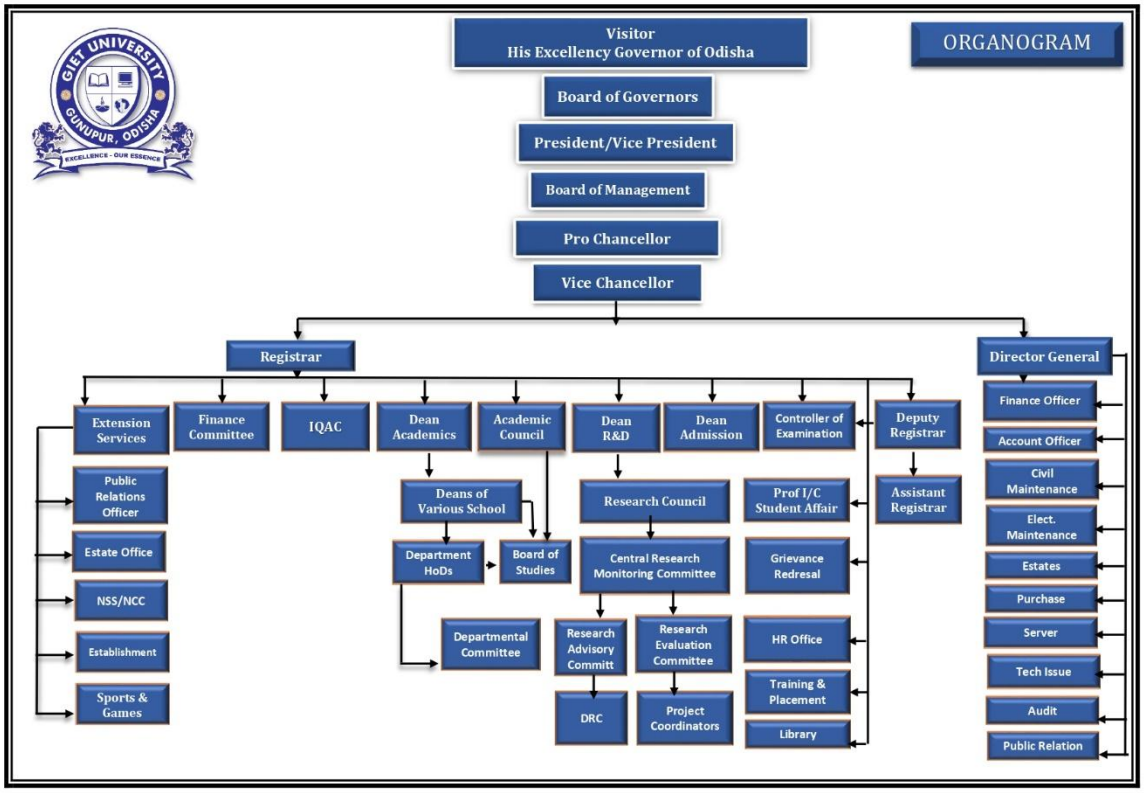
As a result of the Strategic Plan implementation, the institution has seen measurable improvements in academic outcomes, research productivity, student placements, accreditation achievements, and stakeholder satisfaction.

Supporting documents such as the Strategic Plan document, minutes of approval meetings, implementation progress reports, and performance dashboards are maintained and available for verification.

9.6.2. Governing Body, Administrative Setup, Functions of Various Bodies, Service Rules, Recruitment Procedures and Promotion Policies (10)

(Provide details of statutory and non-statutory administrative committees like the Governing body, Academic Council/ Senate, Grievance redressal Committee, IQAC, Anti-Raging committee, Disciplinary committee in place; Internal Complaints Committee (Women harassment mitigation committee), etc., provide the approval of these committees along with details of members, the meetings details (meeting notice, agenda, minutes, action taken, etc. The service rules, policies and procedures; year of publication are to be listed.)

A. Administrative Setup



B. Statutory and Non-Statutory Administrative Committees

Statutory Administrative Committees (Governed by regulatory bodies like UGC, AICTE, etc.)		
Committee	**Purpose / Function / Role**	**Meeting Frequency**

Board of Governors (BoG)	Highest decision-making body; sets vision, policy, governance and overall development strategy.	Quarterly / As needed
Board of Management (BoM)	Executes BoG policies; oversees administration, finance, and HR.	Quarterly
Academic Council	Decides academic policies, curricula, and academic planning.	At least twice a year
Finance Committee	Reviews budgets, financial planning, and expenditure.	Quarterly / Biannually
Planning and Monitoring Board (PMB)	Plans academic and infrastructure growth; monitors implementation.	Quarterly
Board of Studies (BoS)	Designs curriculum, recommends syllabus and course structure.	Biannually / As needed
Internal Quality Assurance Cell (IQAC)	Ensures continuous improvement in academic and administrative performance.	Quarterly
Academic Audit Committee	Reviews academic performance and quality assurance.	Annually
Institutional Ethics Committee	Approves research ethics; ensures compliance with ethical standards.	Quarterly / As needed
Internal Complaint Committee (ICC)	Addresses sexual harassment complaints; ensures a safe working environment.	Quarterly / As required
Grievance Redressal Committee	Handles staff and student grievances impartially.	Monthly / As needed
Anti-Ragging Committee	Prevents and addresses ragging cases in campus.	Quarterly / As required
SC/ST/OBC Cell	Ensures equal opportunity and grievance redressal for reserved categories.	Quarterly / As needed
Right to Information (RTI) Committee	Handles applications under the Right to Information Act.	Monthly / As required
Non-Statutory Administrative Committees		
Committee	**Purpose / Function / Role**	**Meeting Frequency**
Curriculum Development Committee	Designs and reviews curriculum and pedagogy innovations.	Semester-wise / As needed
Faculty Development Committee	Plans training, FDPs, workshops for faculty upskilling.	Quarterly / As needed
Feedback and Stakeholder Committee	Collects and analyzes feedback from students, alumni, employers, and faculty for improvement.	Semester-wise
Research Advisory Committee	Provides strategic guidance on research priorities, policies, and quality enhancement.	Biannually / As needed
Research and Development (R&D) Cell	Promotes research activities, funding, and publications.	Monthly / As required
Intellectual Property Rights (IPR) Cell	Encourages patents, copyrights, and innovation protection.	Quarterly / As needed
Entrepreneurship Development Cell (EDC)	Encourages student startups and entrepreneurship initiatives.	Monthly
Innovation and Incubation Cell	Supports prototyping, startup incubation, and innovation.	Monthly
Training and Placement Cell	Facilitates internships, placements, industry training.	Monthly / As needed
Institute Industry Cell	Strengthens collaboration with industries for internships, projects, and lectures.	Quarterly

Career Guidance and Counselling Cell	Guides students on career choices and mental well-being.	Monthly
E-Governance / Digital Transformation Committee	Oversees digital infrastructure and automation.	Quarterly / As required
Website/IT Management Committee	Manages institutional website updates, digital content, hosting, and IT infrastructure.	Monthly / As needed
Editorial/Publication Committee	Oversees newsletters, journals, research proceedings, and other official publications.	Quarterly / As needed
Admission Committee	Manages admission processes, counseling, and criteria.	Admission Season (Annually)
International Relations / Foreign Students Cell	Supports foreign students and global academic collaborations.	Monthly / As needed
Examination Committee	Plans and conducts exams, manages results and evaluation.	Monthly / Per exam cycle
Library Committee	Enhances library resources, policies, and infrastructure.	Quarterly
Students Welfare Committee	Ensures student support services, health, welfare, and well-being.	Monthly
Disciplinary Committee	Maintains discipline, investigates misconduct, and enforces code of conduct.	Monthly / As needed
Mentorship and Counseling Committee	Provides academic and personal mentoring to students.	Monthly / Semester-wise
Green Campus/Sustainability Committee	Implements eco-friendly initiatives, monitors waste management, energy, and water conservation.	Quarterly / As needed
Cultural Committee	Organizes cultural events, fests, and celebrations.	Monthly / Event-based
Sports Committee	Promotes sports activities, events, and fitness.	Monthly / Event-based
NSS/NCC Unit	Manages community service, national cadet corps programs.	Monthly / Event-driven
Alumni Association/Cell	Engages alumni for networking, mentorship, and contributions.	Biannually / Annually
Faculty Club	Promotes faculty bonding, cultural events, and recreation.	Monthly / Quarterly

Board of Governors		
The Board of Governors shall consist of the following members, namely:-		
a)	The President	Dr. Satya Prakash Panda Chairman, Vidya Bharati Educational Trust, Gunupur (*Ex officio* Chairman)
b)	The Vice-President	Dr. Chandra Dhwaj Panda Secretary, Vidya Bharati Educational Trust, Gunupur
c)	The Vice-Chancellor	Prof. (Dr.) A. V. N. L. Sharma
d)	Three persons nominated by the Trust	1. Smt. Pratima Panda
		2. Smt. Basanta Manjari Panda
		3. Dr. Jagadish Panda

e)	Two experts nominated by the State Government	Prof. (Dr.) Chittaranjan Mohanty Principal, Parala Maharaja Engineering College, Berhampur, Odisha
		Prof. (Dr.) Sudeep Kumar Chand Professor, Department of Civil Engineering, Indira Gandhi Institute of Technology, Sarang, Dhenkanal, Odisha
f)	One member of the Odisha Legislative Assembly nominated by the Speaker in consultation with the leader of the House and the leader of opposition	Smt. Latika Pradhan Hon'ble MLA, Odisha Legislative Assembly, Bhubaneswar
g)	The Secretary to Government, Skill Development and Technical Education Department	Member *ex officio*
h)	Two Deans of the University by rotation, to be nominated by the President in consultation with the Vice-President	1. Dean, School of Engineering and Technology
		2. Dean, School of Management Studies
i)	One Expert of Finance to be nominated by the President in consultation with the Vice-President	Mr. Sanat Kumar Pattanayak Chartered Accountant, Bhubaneswar
j)	Registrar of the University	Dr. N. V. Jagannadha Rao (*Ex officio* Secretary)

Board of Management		
The Board of Management shall consist of the following members, namely:-		
a)	The Vice-Chancellor of the University	Prof. (Dr.) A. V. N. L. Sharma (*Ex officio* Chairman)
b)	The Registrar of the University	Dr. N. V. Jagannadha Rao (*Ex officio* Secretary)
c)	The Finance Officer of the University	Mr. Sanat Kumar Pattanayak
d)	Two members of the Board of Governors, nominated by the Sponsoring Body	1. Dr. Satya Prakash Panda
		2. Dr. Chandra Dhwaj Panda
e)	Three Deans of the University	1. Dean, School of Engineering and Technology
		2. Dean, School of Sciences
		3. Dean, School of Management Studies
f)	Two senior Professors of the University	1. Dean Academics
		2. Dean R&D

Academic Council		
The Academic Council shall consist of the following members, namely:-		
	Internal Members	
1.	Prof. (Dr.) A. V. N. L. Sharma Vice-Chancellor	*Ex officio* Chairman
2.	Dr. N. V. Jagannadha Rao Registrar	*Ex officio* Secretary

3.	Dr. P. Vijayakumar Controller of Examinations	Member
4.	Dr. G. R. K. D. Satya Prasad Director, R&D and HoD, EE & EEE, SoET	Member
5.	Dr. Dulu Patnaik Dean, SoET	Member
6.	Dr. V. S. Devadas Dean, SoA	Member
7.	Ms. Chanchal Kumari Principal, SoN	Member
8.	Dr. Satya Narayan Das Deputy Dean Academics and HoD, CSA, SoS	Member
9.	Dr. K. Murali Gopal Deputy Dean, Computational Sciences, SoET	Member
10.	Mr. Sibo Prasad Tripathy Deputy Registrar	Member
11.	Dr. Prativa Kar HoD, BSH, SoET	Member
12.	Dr. Manoja Das HoD, BT, SoET	Member
13.	Dr. Suman Mishra HoD, CHE, SoET	Member
14.	Dr. Ashis Kumar Samal HoD, CE, SoET	Member
15.	Dr. Bibhu Prasad HoD, ECE, SoET	Member
16.	Dr. Kali Charan Rath HoD, ME, SoET	Member
17.	Dr. Sachikanta Dash HoD, CSE (2021-2025 Batch), SoET	Member
18.	Dr. Premansu Sekhara Rath HoD, CSE (2022-2026 Batch), SoET	Member
19.	Dr. D. Anil Kumar HoD, CSE (2023-2027 Batch), SoET	Member
20.	Dr. Saumendra Das HoD, SoMS	Member
21.	Dr. B. Rabi Prasad HoD, SoS	Member
22.	Dr. Sadananda Sahoo HoD, SoHSS	Member
23.	Dr. Jyotirmaya Mishra Professor I/C, T&P Cell	Member
24.	Mr. Ashok Kumar Mishra Associate Dean (Administration), SoA	Member
25.	Dr. Ajit Kumar Patro Asst. Registrar (Academics)	Member
26.	Mr. Shakti Prasanna Khadanga Asst. Registrar (IQAC)	Member
27.	Mr. Satya Narayan Sahu Asst. Controller of Examinations	Member
	External Members	

1.	Mr. Ramesh Naidu Director, Invenio Business Solutions Pvt. Ltd., Hyderabad, Telangana	Member
2.	Prof. (Dr.) Siba Sankar Mahapatra Professor, Department of Mechanical Engineering, National Institute of Technology, Rourkela, Odisha	Member
3.	Prof. (Dr.) Siba Kumar Udgata Professor, School of Computer and Information Sciences, University of Hyderabad, Hyderabad, Telangana	Member
4.	Prof. (Dr.) Sarbesh Mishra Professor and Dean - Executive Education, Placements & Industry Engagements, NICMAR University of Construction Studies, Hyderabad, Telangana	Member
5.	Prof. (Dr.) Jaydev Rana Professor, Department of Mechanical Engineering, Veer Surendra Sai University of Technology, Burla, Odisha	Member
6.	Dr. Jami Sagar Prusty, MBBS, MS, Ph.D. Professor and Head, Department of Anatomy, M.K.C.G. Medical College, Berhampur, Odisha	Member
7.	Dr. Lalita Mohan Garnayak Director of Research, Central Agricultural University, Imphal, Manipur (Former Dean, PGF-com-DRI Professor and Head, Department of Agronomy, CoA, OUAT, Bhubaneswar)	Member
8.	Dr. S. Satapathy Principal Scientist (Agricultural Entomology), In-Charge, Division of Crop Protection ICAR-Central Research Institute for Jute and Allied Fibres (ICAR-CRIJAF) Nilgunj, West Bengal	Member

Finance Committee		
The Finance Committee shall consist of the following members, namely:-		
a)	The Vice-Chancellor of the University	Prof. (Dr.) A. V. N. L. Sharma (*Ex officio* Chairman)
b)	The Registrar of the University	Dr. N. V. Jagannadha Rao (*Ex officio* Secretary)
c)	The Finance Officer	Mr. Sanat Kumar Pattanayak Chartered Accountant, Bhubaneswar
d)	Such other members as may be nominated by the Board of Governors	Dr. Satya Prakash Panda President, GIET University
		Dr. Chandra Dhwaj Panda Vice-President, GIET University
		Dr. Jagadish Panda Director General, GIET University
		Mr. Sarat Chandra Panda Accounts Officer, GIET University

Grievance Redressal Committee (GRC)			
Sl. No.	**Name**	**Designation**	**Position**
1	Dr. N. V. Jagannadha Rao	Registrar	Chairperson
2	Dr. P. Vijayakumar	Controller of Examinations	Member

3	Prof. (Dr.) Chittaranjan Mohanty	Principal, Parala Maharaja Engineering College, Berhampur, Odisha	Member
4	Dr. Ranjeet Kumar Panigrahi	Professor I/C, Student Affairs and Grievance Cell	Member
5	Dr. Ashima Sindhu Mohanty	Assistant Professor, Dept. of ECE, SoET	Member
6	Mr. Santosh Kumar Tripathy	Assistant Professor, Dept. of ME, SoET	Member

Internal Quality Assurance Cell (IQAC)	
The composition of the IQAC is as follows:	
Chairperson	
Prof. (Dr.) A. V. N. L. Sharma	Vice-Chancellor
Administrative Officers	
Dr. N. V. Jagannadha Rao	Registrar
Dr. Dulu Patnaik	Dean SoET
Dr. G. R. K. D. Satya Prasad	Director (Research & Development)
Dr. P. Vijayakumar	Controller of Examinations
Dr. Ranjeet Kumar Panigrahi	Professor I/c Student Affairs and Grievance Cell
Management Member	
Dr. Jagadish Panda	Director-General
One of the Senior Teachers as the Coordinator of the IQAC	
Mr. Shakti Prasanna Khadanga	Assistant Professor, Dept. of ME, SoET
One of the Senior Teachers as the Co-coordinator of the IQAC	
Dr. Ajit Kumar Patro	Associate Professor, Dept. of ECE, SoET
External Experts	
Prof. (Dr.) Sarbesh Mishra	Professor and Dean - Executive Education, Placements & Industry Engagements, NICMAR University of Construction Studies, Hyderabad, Telangana
Senior Teachers as Members	
Dr. Laxmipriya Parida	Assistant Professor, Dept. of BSH, SoET
Dr. B. Rabi Prasad	Assistant Professor, Dept. of BT, SoET
Dr. Radha Krushna Padhi	Associate Professor, Dept. of CHE, SoET
Ms. Niharika Patel	Assistant Professor, Dept. of CE, SoET
Dr. Bidush Kumar Sahoo	Associate Professor, Dept. of CSE, SoET
Mr. Bhabani Sankar Panda	Assistant Professor, Dept. of CSE, SoET
Dr. Srikant Misra	Associate Professor, Dept. of EE, SoET
Dr. Ranjita Rout	Assistant Professor, Dept. of ECE, SoET
Dr. Sasank Shekhar Panda	Assistant Professor, Dept. of ME, SoET
Dr. Jnana Raghavendra I	Associate Professor, SoMS
Dr. Biplab Kumar Rath	Associate Professor, SoS

Dr. Bhramara Bar Biswal	Assistant Professor, Dept. of CSA, SoS
Dr. Rajeswari Das	Assistant Professor, SoAg
Mr. Kotha Ratan Kumar	Assistant Professor, SoN
Industrial Nominee	
Mr. Tridip Sarma	AGM, Patel Engineering Ltd., Mumbai, Maharashtra
Local Society Nominee	
Mr. K P Bebarta	Agriculturalist & Environmentalist
Alumni Nominee	
Mr. Julen Mohanty	Sr. Director, CTS
Student Members	
Mr. Ayush Sharma	Student
Ms. Rupali Panda	Student

Anti-Ragging Committee

Sl. No.	Name	Designation	Position
1	Dr. N. V. Jagannadha Rao	Registrar	Convener
2	Dr. Ranjeet Kumar Panigrahi	Professor I/C, Student Affairs & Grievance Cell	Co-Convener
3	Mr. Ajay Barik	SDPO, Gunupur	Member
4	Dr. G. R. K. D. Satya Prasad	Director, R&D and HoD, EE & EEE, SoET	Member
5	Dr. Dulu Patnaik	Professor and Dean, SoET	Member
6	Dr. V. S. Devadas	Professor and Dean, SoA	Member
7	Dr. Satya Narayan Das	Deputy Dean Academics and HoD, CSA, SoS	Member
8	Dr. K. Murali Gopal	Deputy Dean, Computational Sciences, SoET	Member
9	Dr. Prativa Kar	Associate Professor and HoD, BSH, SoET	Member
10	Dr. Manoja Das	Associate Professor and HoD, BT, SoET	Member
11	Dr. Suman Mishra	Associate Professor and HoD, CHE, SoET	Member
12	Dr. Ashis Kumar Samal	Associate Professor and HoD, CE, SoET	Member
13	Dr. Bibhu Prasad	Associate Professor and HoD, ECE, SoET	Member
14	Dr. Kali Charan Rath	Associate Professor and HoD, ME, SoET	Member
15	Dr. Sachikanta Dash	Associate Professor and HoD, CSE (2021-2025 Batch), SoET	Member
16	Dr. Premansu Sekhara Rath	Associate Professor and HoD, CSE (2022-2026 Batch), SoET	Member
17	Dr. D. Anil Kumar	Associate Professor and HoD, CSE (2023-2027 Batch), SoET	Member
18	Dr. Saumendra Das	Associate Professor and HoD, SoMS	Member
19	Dr. B. Rabi Prasad	Associate Professor and HoD, SoS	Member
20	Dr. Jyotirmaya Mishra	Professor I/C, T&P Cell	Member

21	Mr. Ashok Kumar Mishra	Associate Dean (Administration), SoA	Member
22	Dr. Rinny Swain	Associate Professor, SoA	Member
23	Mrs. K. Jayashree	Professor, SoN	Member
24	Mr. Kotha Ratan Kumar	Assistant Professor, SoN	Member
25	Mr. Rabindra Kumar Panda	Sports Officer	Member
26	Mr. Raghunath Panda	HR Officer	Member
27	Mr. Sunkari Sibajee	Law Officer	Member
28	Mr. Durga Prasad Rath	SEO	Member
29	Mr. Kali Prasad Pattanaik	Warden (Campus Hostels)	Member
30	Mr. Ashok Kumar Mohapatra	Warden (Town Hostels)	Member
31	Mr. Maheswar Mohapatra	Parent	Member

Disciplinary Committee

Sl. No.	Name	Designation	Position
1	Dr. Srikant Misra	Associate Professor, Dept. of EE, SoET	Convener
2	Mr. Nalinikanta Panda	Assistant Professor, Dept. of ME, SoET	Co-convener
3	Dr. Tapas Ranjan Panigrahi	Assistant Professor, Dept. of BSH, SoET	Member
4	Dr. Prakash Ranjan Sahoo	Assistant Professor, Dept. of CE, SoET	Member
5	Mr. Santosh Kumar Panda	Assistant Professor, Dept. of CSE, SoET	Member
6	Mrs. Archana Patnaik	Assistant Professor, Dept. of CSE, SoET	Member
7	Mr. Balaram Das	Assistant Professor, Dept. of EE, SoET	Member
8	Mrs. Swati Gouda	Assistant Professor, Dept. of EE, SoET	Member
9	Mr. Biswa Mohan Panda	Assistant Professor, Dept. of ECE, SoET	Member
10	Ms. Sandhyarani Swain	Teaching Assistant, Dept. of ECE, SoET	Member
11	Dr. Smruti Rekha Sahoo	Assistant Professor, SoMS	Member
12	Mr. Girija Sankar Pradhan	Assistant Professor, SoMS	Member
13	Dr. Swastik Behera	Assistant Professor, Dept. of LS, SoS	Member
14	Mrs. Priyanka Sahu	Assistant Professor, Dept. of CHEM, SoS	Member
15	Ms. Lipsa Mishra	Assistant Professor, Dept. of CSA, SoS	Member
16	Mrs. Sucharita Panda	Assistant Professor, SoA	Member
17	Dr. Prateek Ranjan Behera	Assistant Professor, SoA	Member
18	Ms. T. Priyanka	Assistant Professor, SoN	Member
19	Mr. Siddharth Sahoo	Tutor, SoN	Member

Internal Complaints Committee (ICC)			
Sl. No.	**Name**	**Designation**	**Position**
1	Dr. Prativa Kar	Associate Professor and HoD, Dept. of BSH, SoET	Convener
2	Dr. Suman Mishra	Associate Professor and HoD, Dept. of CHE, SoET	Member
3	Dr. Rinny Swain	Associate Professor, SoA	Member
4	Dr. Rashmita Panigrahi	Assistant Professor, Dept. of CSE, SoET	Member
5	Ms. Ghanistha Prusty	Assistant Professor, Dept. of LS, SoS	Member
6	Dr. Ranjita Rout	Assistant Professor, Dept. of ECE, SoET	Member
7	Mrs. Manasi Choudhury	Asst. HR Officer	Member
8	Mrs. Sujata Mishra	Office Assistant	Member
9	Dr. Ranjeet Kumar Panigrahi	Professor I/C, Student Affairs and Grievance Cell	Member
10	Mr. Uttam Kumar Sahoo	IIC, Gunupur	Member
11	Mr. Kali Prasad Pattanaik	Warden	Member
12	Mr. Sunkari Sibajee	Law Officer	Member
13	Mr. Durga Prasad Rath	NGO Swabalamban	Member
14	Mr. Saroj Sathpathy	Student	Member
15	Ms. Divya Bharati Kerketa	Student	Member
16	Ms. Bhawani Sahu	Student	Member

SC/ST/OBC Cell			
Sl. No.	**Name**	**Designation**	**Position**
1	Dr. Nilambar Sethi	Associate Professor, Dept. of CSE, SoET	Convener
2	Dr. Bibhu Prasad	Assistant Professor, Dept. of ECE, SoET	Member
3	Mr. B. Vikram Anand	Assistant Professor, Dept. of EE, SoET	Member
4	Mr. P. Sudheer Babu	Assistant Professor, Dept. of CSE, SoET	Member
5	Ms. Manaswini Nagabansa	Assistant Professor, Dept. of CSA, SoS	Member
6	Mr. Dara Venugopal	Assistant Professor, Dept. of BSH, SoET	Member
7	Dr. Tarapatla Lokeswara Rao	Associate Professor, SoMS	Member
8	Mr. R. Chandramohan	Assistant Professor, Dept. of CSE, SoET	Member
9	Ms. T. Priyanka	Assistant Professor, SoN	Member
10	Ms. Renuka Mandal	Assistant Professor, Dept. of BSH, SoET	Member

9.6.3. Transparency (05)

(Information on policies, rules, processes, delegation of financial powers, faculty, students, etc., and dissemination of this information to stakeholders should be made available on the Institute's website. Agendas and minutes of the Governing Body, Academic Council, and Senate are also required to be uploaded on the Institute's website. Additionally, state the extent of awareness among the stakeholders.)

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University) is committed to upholding the highest standards of transparency in its governance, academic, and administrative functions. The following measures are in place to ensure that all stakeholders have easy access to critical information:

A. Mandatory Disclosure as per UGC/AICTE/AISHE on the Institute Website

GIET University strictly adheres to the guidelines laid down by statutory bodies such as UGC, AICTE, and AISHE. All mandatory disclosures, including institutional data, faculty details, program offerings, student intake, infrastructure, and financial information, are regularly updated and made available on the official Institute website. These disclosures comply with the formats and timelines specified by the respective authorities.

B. Availability of Policies, Rules, and Processes on the Institute's Website

All GIET University policies - including academic regulations, examination rules, grievance redressal mechanisms, financial delegation powers, and administrative procedures are accessible through the Institute's website. These documents are updated periodically to reflect changes and improvements and are structured for ease of understanding by students, faculty, parents, and other stakeholders.

Additionally, agendas and minutes of key decision-making bodies such as the Board of Governors, Board of Management, Academic Council, Board of Studies, and Finance Committee are published on the website to promote institutional transparency and accountability.

Awareness Among Stakeholders

Stakeholders are made aware of these resources through orientation programs, newsletters, emails, regular meetings, and announcements. Feedback from faculty, students, and parents indicates a high level of awareness and satisfaction regarding the transparency and availability of institutional information.

9.7. Budget Allocation, Utilization, and Public Accounting at Institute Level (12)

(Provide a summary of the financial year's budget and actual expenditure incurred exclusively for the institution in the three financial years: CFYm1, CFYm2, and CFYm3. If the management oversees multiple Institutions, exclusive audited records for each Institute must be provided and made available on the Institute's website. The budget should be approved by the Institute BoG/GB/GC before the start of the financial year.)

CFY=Current Financial Year.
CFYm1=Current Financial Year Minus 1.
CFYm2=Current Financial Year Minus 2.
CFYm3=Current Financial Year Minus 3.

For CFYm1 [2023-24]

Table No. 9.7.1: Summary of budget and actual expenditure incurred at Institute level for CFY m1 [2023-24].

Total Income in the CFYm1 [2023-24]: ₹ 1,27,03,06,936				**Actual expenditure in the CFYm1 [2023-24]**	**Total Students in the institute**	**Expenditure per student in CFYm1 [2023-24]:**
Fee	**Govt.**	**Grant(s)**	**Other Sources** (Rent/ Interest/ Consultancy/ Misc./ Funds from Trust A/C)			
₹ 1,01,85,46,477	₹ 2,45,04,041	₹ 25,00,000	₹ 22,47,56,418	₹ 1,29,05,49,412	3,432	₹ 94,000

For CFYm2 [2022-23]

Table No. 9.7.2: Summary of budget and actual expenditure incurred at Institute level for CFY m1 [2022-23].

Total Income in the CFYm1 [2022-23]: ₹ 1,42,56,10,396				**Actual expenditure in the CFYm1 [2022-23]**	**Total Students in the institute**	**Expenditure per student in CFYm1 [2022-23]:**
Fee	**Govt.**	**Grant(s)**	**Other Sources** (Rent/ Interest/ Consultancy/ Misc./ Funds from Trust A/C)			
₹ 1,04,02,93,200	₹ 48,17,500	₹ 20,00,000	₹ 37,84,99,696	₹ 1,32,70,35,602	3,813	₹ 87,000

For CFYm3 [2021-22]

Table No. 9.7.3: Summary of budget and actual expenditure incurred at Institute level for CFY m1 [2021-22].

Total Income in the CFYm1 [2021-22]: ₹ 1,02,24,29,006				**Actual expenditure in the CFYm1 [2021-22]**	**Total Students in the institute**	**Expenditure per student in CFYm1 [2021-22]:**
Fee	**Govt.**	**Grant(s)**	**Other Sources** (Rent/ Interest/ Consultancy/ Misc./ Funds from Trust A/C)			
₹ 77,92,45,380	₹ 2,02,81,912	₹ 22,00,000	₹ 22,07,01,714	₹ 98,27,01,194	3,193	₹ 77,000

Note:

- ❖ Audited statements for CFYm1, CFYm2, and CFYm3 are to be uploaded on the website.

Table No. 9.7.2: Budget and actual expenditure incurred at Institute level.

Items	**Budgeted in CFY 2024-25**	**Actual expenses in CFY 2024-25 (till 19-Apr-2025)**	**Budgeted in CFYm1 2023-24**	**Actual Expenses in CFYm1 2023-24**	**Budgeted in CFYm2 2022-23**	**Actual Expenses in CFYm2 2022-23**	**Budgeted in CFYm3 2021-22**	**Actual Expenses in CFYm3 2021-22**
Infrastructure Built-Up	₹ 18,00,00,000	₹ 17,96,84,562	₹ 17,80,00,000	₹ 17,85,83,755	₹ 17,00,00,000	₹ 15,98,02,552	₹ 14,00,00,000	₹ 13,29,73,621
Library	₹ 1,80,00,000	₹ 1,74,56,845	₹ 1,75,00,000	₹ 1,75,94,212	₹ 1,65,00,000	₹ 1,65,14,702	₹ 14,00,000	₹ 1,36,87,960

Laboratory equipment	₹ 7,85,00,000	₹ 7,87,12,968	₹ 7,60,00,000	₹ 7,58,59,941	₹ 7,10,00,000	₹ 7,04,57,118	₹ 4,00,00,000	₹ 3,98,12,746
Teaching and non-teaching staff salary	₹ 57,00,00,000	₹ 54,18,19,856	₹ 56,50,00,000	₹ 53,57,68,609	₹ 54,00,00,000	₹ 51,49,79,902	₹ 44,00,00,000	₹ 43,72,59,068
Outreach Programs	₹ 11,00,00,000	₹ 10,87,54,633	₹ 10,00,00,000	₹ 10,37,23,924	₹ 9,75,00,000	₹ 9,65,28,283	₹ 6,75,00,000	₹ 6,86,76,182
R&D	₹ 1,00,00,000	₹ 98,78,653	₹ 1,00,00,000	₹ 93,16,403	₹ 1,00,00,000	₹ 98,31,601	₹ 96,00,000	₹ 93,27,389
Training, Placement and Industry linkage	₹ 1,25,00,000	₹ 1,21,14,728	₹ 1,00,00,000	₹ 1,02,80,615	₹ 1,55,00,000	₹ 1,54,95,447	₹ 1,45,00,000	₹ 1,41,49,260
SDGs	₹ 1,95,00,000	₹ 1,94,52,628	₹ 1,90,00,000	₹ 1,66,52,968	₹ 1,90,00,000	₹ 1,87,85,011	₹ 1,85,00,000	₹ 1,39,69,631
Entrepreneurship	₹ 1,00,00,000	₹ 98,47,546	₹ 95,00,000	₹ 90,95,173	₹ 85,00,000	₹ 84,15,484	₹ 80,00,000	₹ 79,14,546
Others, (Repair maint./ fees /other capital assets /student expenditure	₹ 22,50,00,000	₹ 22,87,35,442	₹ 23,50,00,000	₹ 21,53,40,665	₹ 27,20,00,000	₹ 27,02,03,514	₹ 24,00,00,000	₹ 21,08,05,608
Total Amount	**₹ 1,23,35,00,000**	**₹ 1,20,64,57,861**	**₹ 1,22,00,00,000**	**₹ 1,17,22,16,265**	**₹ 1,22,00,00,000**	**₹ 1,18,10,13,614**	**₹ 97,95,00,000**	**₹ 94,85,76,011**

9.8. Program Specific Budget Allocation, Utilization (08)

(Total budget at program level: CFYm1, CFYm2 & CFYm3
CFY=Current Financial Year.
CFYm1=Current Financial Year Minus 1.
CFYm2=Current Financial Year Minus 2.
CFYm3=Current Financial Year Minus 3.)

For CFYm1 (Similar table to be prepared for CFYm2 and CFYm3)

Table No. 9.8.1: Summary of budget and actual expenditure incurred at program level.

Total Budget in CFYm1:		**Actual expenditure in CFYm1:**		**Total No. of students in CFYm1:**
Demanded	**Actual Allocated**	**Actual Expenditure**	**% Spent**	**Expenditure per student**
7000000	65,00,000	64,58,440	99.36%	92000

Note: Justification and process of budgeting to be listed.

Table No. 9.8.2: Budget and actual expenditure incurred at program level.

Items	Budgeted in CFY (2024-25)	Actual expenses in CFY 2024-25 (till …)	Budgeted in CFYm1 2023-24	Actual Expenses in CFYm1 2023-24	Budgeted in CFYm2 2022-23	Actual Expenses in CFYm2 2022-23	Budgeted in CFYm3 2021-22	Actual Expenses in CFYm3 2021-22
Laboratory equipment	14,00,000	13,57,264	13,00,000	12,76,542	11,00,000	11,66,864	9,00,000	8,34,325
Software	2,50,000	2,34,800	2,00,000	2,15,000	2,00,000	1,87,800	1,50,000	1,37,500
SDGs	8,00,000	7,27,945	7,00,000	6,85,170	5,00,000	4,94,596	2,00,000	1,56,542
Support for faculty development	2,50,000	2,32,521	3,00,000	2,83,996	2,00,000	1,86,864	1,50,000	1,51,242
R & D	3,00,000	3,11,182	3,00,000	2,82,572	2,30,000	2,14,226	2,00,000	1,92,878
Industrial Training, Industry expert, Internship	3,50,000	3,43,854	3,00,000	2,82,960	2,20,000	2,21,514	2,00,000	2,14,852
Miscellaneous expenses (seminar/ Workshop/Lab conumable & maint ,Overhead & other misc	36,00,000	35,77,955	34,00,000	34,32,200	28,50,000	26,76,580	18,00,000	18,41,564
Total amount	**69,50,000**	**67,85,521**	**65,00,000**	**64,58,440**	**53,00,000**	**51,48,444**	**36,00,000**	**35,28,903**

9.9. Quality of Learning Resources (Hard/Soft) (05)

(Provide details of available learning resources, including e-resources (books and journals), as well as information on the accessibility of these resources to students. Additionally, describe the support provided to students for self-learning activities.)

GIET University offers a comprehensive array of learning resources, both in hard and soft formats, to support students' academic and self-learning needs.

A. Availability of Relevant E-Learning Resources of the Program

GIET University provides access to a wide range of e-learning resources relevant to the program. These include:

- **E-books and online journals** through subscriptions to databases such as **Science Direct, NPTEL etc**.
- course materials, recorded lectures, assignments, and quizzes for all subjects are being hosted in the University Website.
- Access to **virtual labs**, simulation software, and subject-specific tools (e.g., MATLAB, AutoCAD, Python IDEs, etc.), depending on the discipline.

- **Digital library services** allow students to access thousands of academic titles across disciplines.

B. Accessibility of Learning Resources to Students

Students have 24/7 access to all digital learning resources through institutional login credentials. Key features include:

- **Remote access** to e-resources via the institution's digital portal, allowing learning from anywhere.
- A well-equipped **central library** with high-speed internet, e-reading terminals, and dedicated support for accessing e-journals and databases.
- **Departmental resource centers** provide subject-specific books, project reports, and software tools.
- **Orientation sessions and workshops** are regularly conducted to train students in utilizing e-resources effectively.
- **Mentoring and faculty support** are available for guiding students in self-learning and research activities.

GIET University ensures that students from all backgrounds can easily access and effectively use learning materials, fostering a strong self-learning culture.

Timing of the library	ROUND THE CLOCK (24 × 7)
Total Area of Library	1206 Sq.mt.
Two Reading Halls with Seating Capacity	1000
Number of Books (Textbook and Reference)	81629
Number of Titles	13224
Number of Back Volume	3107
Number of CDs & DVDs	4667
Number of Periodicals- Hard Copies (Magazines)	28
Number of Periodicals- Hard Copies Journals (National and International)	61
Number of E-Journals Subscribed including WoS	1118 form 04 Publishers
Number of Newspapers	17
Number of NPTEL Web and Video Materials	576
Library Software	Koha Open LMS-21.05.03.001
Plagiarism Software	Turnitin
e-library (e-book, NPTEL, Remote Access)	KNIMBUS (https://new.knimbus.com)
Total Number of Library Staff	15
Technical Staff	4
Library Membership	DELNET and National Digital Library (NDL)
Computerization for searching and indexing	Yes

Reprographic Facilities	Yes (Photocopy, Spiral, Lamination)

9.10. E-Governance (05)

(E-governance initiatives, sustainable practices in academic and learning management, campus-wide computing resources, and their accessibility and availability to support academic and professional activities for students and faculty.)

GIET University actively promotes **e-governance** as a vital enabler of transparency, efficiency, and accessibility in academic and administrative functions. A combination of digital infrastructure, policy implementation, and stakeholder engagement ensures that governance processes are streamlined and inclusive.

E-Governance Initiatives

Key administrative and academic operations are digitized using robust **Enterprise Resource Planning (ERP)** systems. These platforms manage everything from admissions, examinations, attendance, and performance tracking to finance and human resource management. Online grievance redressal systems and e-feedback portals encourage transparency and student participation.

Sustainable Practices in Academic and Learning Management

To ensure environmental responsibility and reduce paper-based processes, the institution has adopted e-notices, and online application systems for certificates, leaves, and internal communication. Course materials, syllabi, and learning resources are shared online to reduce the need for printing. Virtual classrooms and blended learning approaches are encouraged, supporting both synchronous and asynchronous learning.

Campus-wide Computing Resources

GIET University maintains a **comprehensive digital infrastructure**, including high-speed internet connectivity across the campus, computer laboratories with modern hardware, and access to licensed software for specialized disciplines. Faculty and students benefit from institutional subscriptions to e-journals, databases, and online libraries (e.g., SWAYAM-NPTEL).

Accessibility and Availability

To promote inclusive education, computing resources are made available through extended lab hours, remote access tools, and centralized helpdesk services. Tech support teams ensure regular maintenance and troubleshooting. E-resources are accessible via institutional credentials, allowing students and faculty to use them off-campus as well. Awareness and training sessions are conducted to improve digital literacy and maximize resource utilization.

9.11. Initiatives and Implementation of Sustainable Development Goals (SDGs) (10)

(Provide details of initiatives taken towards implementation of SDG specifically on green energy, waste management, preserving water, net zero, quality education, reuse, recycle, less use to renewables, etc. Provide evidence on implementation (projects assigned, R & D activities, entrepreneurial activities, outreach programs, etc.)

GIET University has actively undertaken several initiatives aligned with the United Nations Sustainable Development Goals (SDGs), focusing on environmental sustainability, quality education, and responsible consumption. Key initiatives include:

1. **Green Energy (SDG 7 - Affordable and Clean Energy)**

- **Solar Power Installation:** Solar panels with a capacity of **500 kW** have been installed on campus rooftops to meet part of the institution's energy needs.
- **Energy Efficiency:** LED lighting systems and smart energy meters have been deployed across departments to reduce electricity consumption.
- **R&D in Renewable Energy:** Faculty and student research projects have focused on solar energy optimization, energy storage solutions, and hybrid renewable energy systems.

2. **Waste Management (SDG 12 - Responsible Consumption and Production)**

- **Solid Waste Segregation:** Implementation of a three-bin system for waste segregation (organic, recyclable, and landfill waste).
- **Composting Units:** Organic waste is processed in on-campus composting units and used as manure for campus landscaping.
- **E-Waste Disposal Drives:** Adopted Solid waste and bio-waste disposal mechanism
- **Recycling Paper and Plastic:** Use of recycled paper for internal printing and promoting the reduction of single-use plastics.

3. **Preserving Water (SDG 6 - Clean Water and Sanitation)**

- **Rainwater Harvesting:** Installation of rainwater harvesting pits to recharge groundwater and reduce surface runoff.
- **Low-Flow Fixtures:** Use of water-efficient taps and dual-flush systems in washrooms to minimize water wastage.
- **Awareness Programs:** Periodic campaigns and workshops to promote water conservation practices among students and staff.

4. **Net Zero Commitment (SDG 13 - Climate Action)**

- **Tree Plantation Drives:** Regular plantation drives are conducted to increase green cover and carbon sequestration.
- **Green Campus Certification:** Steps have been initiated towards attaining Green Campus Certification by implementing sustainable practices.

5. **Quality Education (SDG 4 - Quality Education)**

- **Curriculum Integration:** Courses on environmental studies, sustainable development, and green technologies are incorporated across programs.
- **SDG Awareness Workshops:** Regular seminars and webinars are conducted to sensitize students about the importance and implementation of SDGs.
- **Innovation & Incubation:** Support to student-led start-ups and projects related to sustainability through incubation centres.

6. **Circular Economy Initiatives: Reuse, Recycle, Reduce, Renewables**

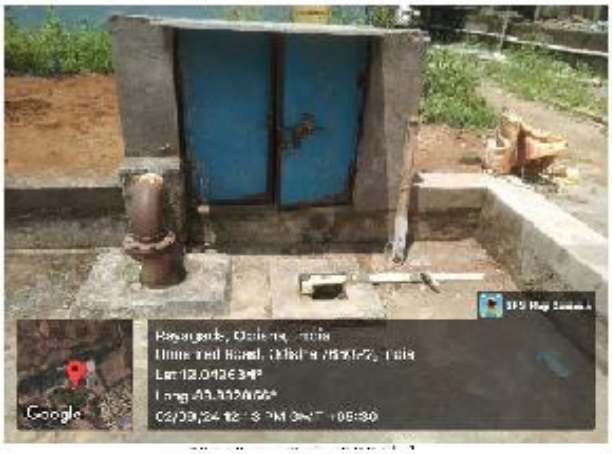
- **Upcycling Initiatives:** Student clubs are encouraged to design products from waste materials (e.g., eco-bricks, art from scrap).
- **Minimal Paper Usage:** Promotion of digital documentation and e-governance systems to reduce paper use.
- **Reuse Drives:** Organization of donation drives for books, clothes, and stationery.

7. **Community Outreach Programs**

- **Village Adoption Program:** Sustainable development models implemented in adopted villages - such as solar street lighting, sanitation awareness, and water conservation.
- **Entrepreneurial Projects:** Student-led initiatives such as biodegradable product development, solar-powered devices, and low-cost water filters.









9.12. Innovative Educational Initiatives and Implementation (05)

(Provide details of initiatives taken towards mobility of students, implementation of academic bank of credits, and support for holistic education including human values, multidisciplinary/interdisciplinary curriculum/programs, initiatives on Indian Knowledge System, Contribution towards and implementation of teaching in Indian language, etc. Policies on inclusivity and equity and their implementation, support for economically, socially and physically challenged students. Action plan and its implementation for slow learners.)

GIET University has undertaken several forward-thinking initiatives aligned with the National Education Policy (NEP) 2020 to enhance educational quality, inclusivity, and flexibility. These initiatives focus on promoting student mobility, interdisciplinary learning, inclusivity, and cultural integration, while also supporting slow learners and marginalized communities.

1. **Student Mobility and Academic Bank of Credits (ABC)**

- GIET University has registered with the **Academic Bank of Credits** (ABC) platform to facilitate student mobility across higher education institutions. Students are encouraged to earn and deposit credits in the ABC, promoting lifelong learning and flexibility in academic pursuits.
- The Choice-Based Credit System (CBCS) is fully implemented, allowing horizontal and vertical academic mobility.

2. **Holistic Education and Human Values**

- Value-added courses focusing on **ethics, empathy, leadership, and environmental consciousness, Human Values etc.** are embedded into the curriculum to promote holistic development.
- Regular workshops, seminars, and guest lectures on **emotional intelligence, mindfulness, and social responsibility** are conducted for both students and faculty.

3. **Multidisciplinary and Interdisciplinary Programs**

- GIET University has introduced **interdisciplinary elective courses** allowing students to choose subjects across departments.
- Projects and assignments often involve **cross-disciplinary collaboration**, encouraging students to integrate knowledge and skills from multiple domains.

4. **Indian Knowledge Systems (IKS) and Language Promotion**

- Courses and awareness programs on **Indian Knowledge Systems** including Yoga, Essence of Indian Traditional Knowledge, Constitution of India etc. are offered.
- **Teaching in Indian languages** has been encouraged; select programs offer **bilingual instruction (English and regional language)** to support regional learners.
- Cultural events, workshops, and national festivals are celebrated to sensitize students about Indian heritage.

5. **Policies on Inclusivity and Equity**

- GIET University ensures **equitable access to quality education** through transparent admission policies and merit-cum-means scholarships.
- Support systems such as **Remedial Coaching, Equal Opportunity Cell**, and **Women Empowerment Cell** are actively functioning.
- Regular sensitization programs on **gender, caste, and disability rights** are conducted to foster an inclusive campus culture.

6. **Support for Economically, Socially, and Physically Challenged Students**

- Fee concessions, scholarships, and financial aid are provided to economically weaker sections.
- The campus infrastructure is **differently-abled friendly** with ramps, lifts, and accessible restrooms.
- A **Student Counselling Centre** provides academic and emotional support.
- Dedicated faculty mentors are assigned to guide and support socially disadvantaged students.

7. **Action Plan for Slow Learners**

A structured intervention system is in place, which includes:

- **Bridge courses and foundation classes** at the beginning of each academic session.

- **Remedial classes, peer tutoring, and mentoring** throughout the semester.
- **Continuous assessment and feedback** mechanisms to track progress.
- **Customized learning materials and one-on-one sessions** for targeted support.

9.13. Faculty Performance Appraisal and Development System (FPADS) (10)

(Faculty members of Higher Educational Institutions today have to perform a variety of tasks pertaining to diverse roles. In addition to instruction, faculty members need to innovate and conduct research for their self-renewal, keep abreast of changes in technology, and develop expertise for the effective implementation of curricula. They are also expected to provide services to the industry and community to understand and contribute to solving real-life problems in industry. Another role involves shouldering administrative responsibilities and cooperating with other faculty, heads of departments, and the head of the institute. An effective performance appraisal system for faculty is vital for optimizing the contribution of individual faculty to institutional performance.
The assessment is based on a well-defined system for faculty appraisal for all the assessment years and its implementation and effectiveness.)

The Faculty Performance Appraisal and Development System (FPADS) at Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University) is designed to assess and enhance faculty members' contributions in teaching, research, innovation, curriculum development, industry and community engagement, and administration. This system ensures continuous professional growth and aligns faculty performance with institutional goals.

1. Objectives of FPADS

- To evaluate faculty performance systematically based on predefined parameters.
- To promote faculty development through training and research opportunities.
- To maintain transparency in the appraisal process and encourage self-improvement.
- To enhance institutional excellence through continuous faculty growth.

2. Appraisal Parameters

Faculty performance is assessed based on the following key parameters:

- Teaching & Learning
- Research & Publications
- Industry Interaction & Consultancy
- Administrative & Institutional Responsibilities
- Professional Development

3. Implementation of FPADS

3.1. Data Collection & Evaluation

- Faculty members submit a Self-Appraisal Report with supporting documents.
- Department Heads and Academic Committees review performance.
- Student feedback is considered as part of the teaching evaluation process.

3.2 Performance Review Meetings

- A review committee evaluates the compiled appraisal data.
- Faculty members receive feedback and guidance for improvement.
- Performance outcomes are linked to increment, promotions and incentives.

4. Effectiveness of FPADS

4.1. Performance Improvement Trends

- A 20% increase in faculty research publications has been recorded over the past three years.
- There is a marked rise in faculty participation in Faculty Development Programmes (FDPs) and workshops, enhancing pedagogical skills.
- Orientation classes are conducted before each semester, during which faculty members deliver demonstration classes on the subjects assigned for the upcoming semester.

4.2. Transparency and Feedback Mechanism

- Faculty members are granted access to their detailed performance reports.
- Regular feedback sessions help refine the appraisal process and support professional development.

The FPADS at GIET University plays a crucial role in fostering a culture of accountability, continuous learning, and excellence among faculty members, thereby contributing significantly to the university's academic and institutional growth.

GANDHI INSTITUTE OF ENGINEERING AND TECHNOLOGY UNIVERSITY, ODISHA, GUNUPUR
(GIET UNIVERSITY)
(Established Vide Odisha Act 23 of 2018, Included by UGC, New Delhi, and Approved by AICTE, ICAR, INC, DSIR, New Delhi)
Gunupur - 765022, Dist.- Rayagada, Odisha, INDIA
www.giet.edu

SCHOOL OF ENGINEERING AND TECHNOLOGY (SoET)

FACULTY SELF ASSESSMENT FOR THE ACADEMIC YEAR:

01. General Information:

(a) Emp. Code :

(b) Name in full :
(in block letters)

(c) Department :

02. Academic Qualifications:

Qualification	Year of passing	Institution

(a) Additional Qualifications / Fellowships / Memberships / Certificate courses :

(b) Area of specialization, if any :

(c) Date of Joining :

(d) Present designation and Date of appointment to that designation :

(e) Last Increment Effected Date :

03. Experience :

(a) Industrial experience if any :

(b) Teaching experience total :

Name of the college	From (Date/Month/Year)	To (Date/Month/Year)	Experience in years
GIET University			
Other Colleges / Organizations			

PART - A

A1. Student feedback (Theory subjects only): - **20 M**

S. No	Year-Sem-Branch-Sec	Subject Name	No. of students	Percentage	Average %	Self-Assessment Marks
1						
2						
3						
4						

5					>=90&<100 = 20 >=80&<90 = 15 >=70&<80 = 10 >=60&<70 = 05
6					
7					
8					

A2. Subjects Average Pass Percentage: - **20 M**

S. No	Subject Name	Year-Sem-Branch-Sec	No. of students appeared (A)	Passed (B)	Pass Percentage (B/A*100)	Average %	Self-Assessment Marks
1							
2							
3							
4							
5						>=90&<100 = 20 >= 80&<90 = 15 >=70&<80 = 10 >=60&<70 = 05	
6							
7							
8							

A3. Average Academic Classes (Theory only)**:** - **10 M**

S. No	Subject Name	Year-Sem-Branch-Sec	No. of periods as per lesson plan (A)	No. of periods conducted (B)	Percentage of classes taken in allotted subjects (B/A*100)	Average %	Self-Assessment Marks
1							
2							
3							
4							
5						>=100 = 10 >=90&<100 = 7 >=80&<90 = 3 <80 = 0	
6							
7							
8							

PART - B

B1. Workshops, Teaching-Learning-Evaluation Technology Programs, Faculty Development Programs, STTP (Short term training programs) attended, Online Certificate courses: - **10 M**

S. No	Program	Duration	Date & Place	Organized by	Achievement
1					
2					
3					
4					
5					

***Two per year out of which one should be at a venue above 200 Kms from the University preferably NITs/Reputed Universities/IITS (MOOCS/SWAYAM/NPTEL in case of online certification)**

B2. Patents / Trademarks / Design etc., Applied / Published / Granted: - **10 M**

S. No	Name of the patent (National / International)	Name of the Principal Investigator	My role in patent (2nd, 3rd, 4th etc.,)	Date of application / publication / granted	Published status with file No. (Applied / Published) OR If Commercialized fund generated (Rs/-)	Obtained Self-Assessment Marks (Maximum Marks 10)
1						

2						
3						
4						
For 1st and 2nd author role For Publication = 5 For grant & commercialization = 10				For other roles For Publication = 2 For grant & commercialization = 5		

B3. Details of research project proposals sent / ongoing for grants / sanctions & grants obtained:
(Enclose Copy as proof) **- 10 M**

S. No	Title of the proposal with file No.	Funding agency	Name of the faculty applied as PI	My role PI / CO-PI	Applied / sanctioned amount	Applied Date	Present status	Obtained Self-Assessment Marks (Maximum Marks 10)
1								
2								
3								
4								
For sanction of grants for more than Rs.50 Lakhs = 10 For sanction of grants for between Rs. 30 Lakhs to Rs. 50 Lakhs = 8 For sanction of grants for between Rs. 20 Lakhs to Rs. 30 Lakhs = 5 For sanction of grants for less than Rs.30 Lakhs = 3 **(Only for research grants)**				For sanction of grants for more than Rs.50 Lakhs = 8 For sanction of grants for between Rs. 30 Lakhs to Rs. 50 Lakhs = 5 For sanction of grants for between Rs. 20 Lakhs to Rs. 30 Lakhs = 3 For sanction of grants for less than Rs.30 Lakhs = 2 **[Type of grants: MODROBS / Conference / Seminar / Infrastructure based]**			

B4. Research Publications and Academic Contributions: **- 10 M**

S. No	Type of Research Papers	No. of Papers	Maximum Self-Assessment Marks	Obtained Self-Assessment Marks (Maximum Marks 10)
1	1 Scopus/SCI indexed papers/Chapters/Book		10 M	
2	1 National/International Journals (Non-Paid)		07 M	
3	1 Reputed Conference Papers		05 M	
4	1 Journal/Conference Papers		05 M	
5	No Journal / Conference Papers		0 M	

B4. a) Scopus/SCI indexed Journals Papers:

S. No	Journal details and title with Page No's	ISSN/ SCOPUS No.	Whether peer reviewed impact Factor, if any	Specify Author 1 / Author 2 / Author 3
1				
2				
3				
4				

B4. b) National /International Journals (Non-Paid) Papers:

S. No	Journal details and title with Page No's	ISSN/ SCOPUS No.	Whether peer reviewed impact Factor, if any	Specify Author 1 / Author 2 / Author 3
1				
2				
3				
4				

B4. c) Reputed Conference Papers:

S. No	Title with Page No's	International/National Conference	Details of Conference	Specify Author 1 / Author 2 / Author 3
1				
2				
3				

B4. d) Journal / Conference Papers:

S. No	Title with Page No's	International/National Journal/Conference	Details of Journal / Conference	Specify Author 1 / Author 2 / Author 3
1				
2				
3				

B5. Proctoring Students Average Value additions: **- 10 M**

S. No	No. of students allotted for proctoring	Year-Sem-Branch-Sec	No. of students participated in Paper presentations/Posters presentations/Technical exhibitions etc. outside the campus (A)	No. of students won prizes (B)	Percentage (B/A) *100	Average %	Self-Assessment Marks
1							
2							
3						For Merely Participation = 5 For winning prize = 5 Nil = 0	
4							

***06 different students in a semester to be participated**

Staff Appraisal – Points Earned:

PART A	Students feedback % (20M)	
	Subjects Average Pass % (20M)	
	Average Academic Class % (10M)	
	Sum of A	
PART B	Workshops / STTP / FDP / Online Course (10M)	
	Patents / Trademarks /Design etc., Applied / Published / Granted (10M)	
	Details of research project proposals sent/ongoing for grants / sanctions & grants obtained. (10M)	
	Research Publications and Academic Contributions (10M)	
	Proctoring Students Average Value additions % (10M)	
	Sum of B	
TOTAL SUM (A +B)	Total out of (100 M)	

PART - C

C1. Ph.D. Guidance: (Ph. D holders only)

S. No	Name of the Scholar	Area of Research	Ph.D. Registration No	Status
1				
2				
3				
4				
5				

C2. Details of any consultancy work / extension activity undertaken: (Enclose copy as proof)

S. No	Type of consultancy work (Academic/Industrial)	Name of the consultancy project	Date & Duration	Total cost of the project	Revenue generated (In INR)
1					
2					
3					

C3. Linkages/MoUs with institutions/industries for internship on-the job training, project work, sharing of research facilities etc.:

S. No	Name of the Organisation	Nature of linkages	No. of faculty /students benefited	Date	Duration
1					
2					
3					

C4. Industrial Visits Arranged for the Students:

S. No	Name of the Organisation visited	Students got exposed to which area of their study	No. of faculty /students benefited	Date of visit	Remarks
1					
2					
3					
4					

C5. Additional responsibilities in the Department / University:

S. No	Responsibility	Assigned by	Duration	Outcome
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

Date: Signature of Faculty

Performance Based Appraisal – Points Earned

PART A	Students feedback % (20M)	
	Subjects Average Pass % (20M)	
	Average Academic Class % (10M)	
	Sum of A	
PART B	Workshops/ STTP/ FDP/Online course (10M)	
	Patents / Trademarks / Design etc., Applied / Published / Granted (10M)	
	Details of research project proposals sent/ongoing for grants / sanctions & grants obtained. (10M)	
	Research Publications and Academic Contributions (10M)	
	Proctoring Students Average Value additions % (10M)	
	Sum of B	
TOTAL SUM (A +B)	Total out of (100 M)	

Remarks of the HoD:

Signature

Remarks of the Dean / Principal:

Signature

9.14. Outreach Activities (05)

(Provide details of outreach activities such as community service, Unnat Bharat Abhiyan, social internship and society connect activities undertaken by the students and their achievements.)

Gandhi Institute of Engineering and Technology University, Odisha, Gunupur (GIET University) places a strong emphasis on community engagement and social responsibility through a wide range of outreach programs. These activities aim to foster holistic development among students while making a meaningful impact on society. The following outreach initiatives were undertaken:

Community Service Initiatives:

Students actively participated in cleanliness drives, blood donation camps, tree plantation programs, and awareness campaigns related to health, hygiene, and education. These activities were conducted in collaboration with local NGOs and municipal bodies. Over 500 students participated, contributing more than 3,000 hours of service collectively.

Unnat Bharat Abhiyan (UBA):

Under the UBA initiative, the institution adopted five villages in the surrounding region. Regular surveys and need assessments were conducted, leading to the implementation of solutions such as solar-powered street lighting, awareness sessions on digital literacy, and health check-up camps. The initiative fostered a strong connection between the students and rural communities, encouraging sustainable rural development.

Social Internships:

GIET University's NSS students actively interact with the elderly at nearby assisted living facilities as part of their social internship. The goal of this program is to help kids develop empathy, compassion, and social responsibility. Students perform health and wellness awareness classes, plan cultural and recreational events, help with everyday chores, and spend quality time with the residents while they are there. In addition to giving seniors happiness and company, these exchanges give students important insights into the needs and lives of senior persons, which motivates them to make constructive contributions to the community.

Society Connect Programs:

GIET University's National Service Scheme (NSS) division is essential in encouraging students' civic engagement and social responsibility. It actively engages in a range of extension and outreach initiatives all year long. Important programs include the Spandan Program, Special Camps, Winter Camps in the chosen communities, Swachh Bharat Abhiyan, and Health Awareness Campaigns. These programs address significant societal concerns while attempting to inculcate in pupils a sense of civic responsibility, compassion, and leadership. The NSS unit assists students develop into responsible, compassionate citizens while also improving society through these initiatives.

Faculty Mentorship:

Each outreach group was assigned faculty mentors to ensure structured planning, execution, and reflection on learning outcomes.

Society Connect Activities Undertaken by the Students:

Number of extension and outreach programs conducted by the institution through organised forums like NSS/NCC with involvement of community year wise during the last four years are

Sl. no.	Name of the activity	Organising unit/Forum/ collaborating agency	Date of the activity	Number of students participated in such activities
1	Observation of National Girl Child Day in Regeda	NSS	24.01.2021	150
2	Organised a Marathon based on the observation Fit India Program	NSS	02.10.2021	150
3	Organised a camp on “Har Ghar Tiranga”	NSS	11.08.2021	150
4	Observation of Swami Vivekananda Jayanti	NSS	12.01.2021	80
5	Road Safety week	NSS	13.01.2021	50
6	Appreciation to COVID-19 Warriors	NSS	14.02.2021	10
7	Observation of International Yoga Day	NSS	21.06.2021	Planation of 50 Neem plants with 60 students
8	Observation of Fit India Movement	NSS	29.08.2021	Cyclothon with help of 30 students
9	Swachha Bharat Program	NSS	22.08.2021	100
10	Awareness program on World AIDS day	NSS	01.12.2021	100
11	Observation of World Environment Day	NSS	05.06.2022	60
12	Bahuda Car Festival	NSS	09.07.2022	90
13	Skill Development Programme: Sankalp India	NSS	03.08.2022	60
14	Organised a camp on “Har Ghar Tiranga”	NSS	13.08.2022	150
15	Children's Day celebration	NSS	14.11.2022	50
16	Community Reach Programme at Ghannantari Village Regarding New Farming Technology	School of Agriculture with Shubham Bio CNG	17.11.2022	30
17	Sri Gundicha Car Festival	NSS	22.07.2022	90
18	Road Safety Week	NSS	15.01.2022	65
19	Organization of Blood Donation Camp	NSS	23.01.2022	121 Blood Unit
20	Awareness Program on World Cancer Day	NSS	04.02.2022	30
21	Shiva Ratri Camp at Shiv Temple in Sefali Hill	NSS	01.03.2022	100
22	Swabhalamban Programme: Regular Driving Training Programme	GIET University	15.03.2022	10
23	Sri Gundicha Car Festival	NSS	01.07.2022	90
24	Bahuda Car Festival	NSS	29.07.2022	95
25	Observation of National Girl Child Day	NSS	24.01.2022	100

26	Tree Plantation Programme	NSS/NCC	07.07.2022	95
27	Observation of Van Mahostav week	NSS	05.07.2022	90
28	Spandan Program on National Daughter's Day	NSS	22.09.2023	42
29	Spandan Program on Gandhi Jayanti	NSS	02.10.2022	45
30	Observation of World Mental Health Day	NSS	13.10.2022	20
31	Special Camp: Free Medical Checkup	NSS	10.12.2022	40
32	Village Survey Camp for awareness of Hygiene and Cleanliness in village Regeda	NSS	05.11.2023	36
33	Swachha Bharat Abhiyan on birth day of Rani Laxmi Bai	NSS	19.11.2023	40
34	Blood Donation Camp	NSS	22.03.2023	20
35	Swabhalamban Programme: Regular Driving Training Programme	GIET University	15.03.2023	15 untrained people
36	Winter Special Camp	NSS	06.01.2023	50
37	Special Camp	NSS	10.01.2023	55
38	Girl Children Awareness Programme	NSS	15.01.2023	46
39	Road Safety week	NSS	16.01.2023	55
40	Blood Donation Program On Netaji Subhas Chandra Jayanti	NSS	23.01.2023	45
41	Beti Bachao Beti Padao: Observation of National Girl Child Day	NSS	24.01.2023	50
42	Celebration of Matrys Day	NSS	30.01.2023	60
43	Awareness Program on world Cancer Day	School of Nursing	04.02.2023	50
44	Shiva Ratri Camp at Shiv Temple at Sefali Hill	NSS	18.02.2023	100
45	Workshop on Self Defence on occasion of International Women's Day	NSS	08.03.2023	40
46	Family Survey on Poshan Abhiyan on Rastriya Poshan Maah	NSS	14.03.2023	78
47	Spandan Program	NSS	30.03.2023	70
48	Awareness Program on World Water Day	NSS	22.03.2023	49
49	Awareness Programme on TB Day	NSS	24.03.2023	35
50	Distribution of Butter Milk on Rama Navami	NSS	30.03.2023	80
51	Observation of World Environment Day	NSS	05.06.2023	100
52	Van Mohachav Program in the vacant area of the main road	NSS	07.07.2023	100
53	International Youth Day	NCC	12.08.2023	60
54	Nutriotion Awareness Program on Malnutrion Day	NSS	18.09.2023	38
55	Blood Donation Camp On World Heart Day	NSS	29.09.2023	50
56	Plantation Program on Gandhi Jayanti	NSS	02.10.2023	70
57	Observation of Constitution Day	NSS	26.11.2023	30
58	Lunger on the eve of GIET Foundation Day	NSS	27.12.2023	150
59	Monitoring and Evaluating Cauliflower harvest ising INM in Progressive Farmer of Bijaypur Village	School of Agriculture with ACIC	27.12.2023	46

60	Children's Day Celebration at Orphanage	NSS	14.11.2023	80
61	Awareness on safety and the laws against sexual harassment of girls program organized	NSS	15.01.2023	60
62	Swachha Bharat Abhiyan	NSS	26.10.2023	58
63	Training of Mushroom Production at Bijipur village Mohana Gajapati District	NSS	16.11.2023	42 Farmers
64	Swachha Bharat Abhiyan on birth day of Rani Laxmi Bai	NSS	19.11.2023	45
65	Observation of "Anti Tobaco Day"	NSS	31.05.2023	70
66	Organized a Swachha Bharat Program	NSS	26.11.2023	60
67	Diagnostic field visit to a Progressive Farmer	NSS	19.09.2023	65
68	Skill Development of farm Women on Mushroom production	NSS	24.11.2023	25 Farm women with 30 students
69	NSS camp at Rath Yatra for distribution of Curd Water	NSS	20.06.2023	48
70	Organization of blood donation camp	NSS	23.01.2023	40
71	Independence Day Celebration	NCC	15.08.2023	45
72	Plantation programme on the ocassion of National Unity Day	NSS	31.10.2023	
73	Observation of World AIDS Day	School of Nursing	01.12.2023	50
74	Mega Blood donation camp	NSS	23.01.2024	150
75	Swabhalamban Programme: Regular Driving Training Programme	GIET University	14.02.2024	10
76	Butter milk distribution in Pakhala Diwas	NSS	20.03.2024	69
77	Swachha Bharat Program at Badaguda	NSS	23.03.2024	10
78	NSS Spl Camp	NSS	24.03.2024	60
79	Awareness programme on World Tuberculosis Day	NSS	29.03.2024	55
80	Monitoring Harvest of Tomato of progressive farmer	ACIC & School of Agriculture	25.01.2024	1 progressive farmer with 6 students
81	Republic Day Camp	NCC	26.01.2024	3
82	Household Survey in Badaguda Adopted village	NSS	25.03.2024	50
83	Shiva Ratri Camp at Shiv Temple in Sefali Hill	NSS	08.03.2024	100
84	Mushroom Training programme to female farmers	NSS	11.03.2024	20 farmers and 15 students
85	Monitoring Harvest of Tomato at Bijayapur Village	School of Agriculture	12.04.2024	4 farmers and 4 students
86	Diagnostic Field visit in Pandrajholi village	School of Agriculture	27.02.2024	3 farmers with 15 students
87	Free Medical Camp at Badaguda	NSS	27.03.2024	50
88	Road Safety week	NSS	14.01.2024	60
89	Encouraging Farm Women for Mushroom cultivation	School of Agriculture	17.01.2024	20 Farm Women with 20 students
90	Blood Donation Program On World Blood Donor Day	NSS	14.06.2024	60
91	Spandan Programme on Guru Purnima	NSS	21.07.2024	50

92	Observation of "Bond of Protection" on the occasion of Rakshya Bandhan at Orphanage	NSS	19.08.2024	55
93	Organisation of an awareness program for village people to save themselves and others from sudden fire caught	NSS	28.03.2024	70
94	Agricultural camp to educate students and local farmers on sustainable farming practices, soil health and modern agricultural techniques	NSS	29.03.2024	50
95	NSS camp at Rath Yatra for distribution of Curd Water	NSS	07.07.2024	150
96	Blood Donation Camp on Utkal Diwas	NSS	01.04.2024	44
97	Rally on World Health Day	NSS	07.04.2024	55
98	Mini Blood Donation Camp	NSS	12.04.2024	54
99	Encouraged a progressive farmer K. Shiv Kumar for scaling up his Horti-based Farm	School of Agriculture	12.04.2024	1 Farmer with 10 students
100	Butter milk distribution on Pana sankranti	NSS	13.04.2024	48
101	Night Meeting conducted in Village Karama for forming Krushak Sangha	School of Agriculture	15.04.2024	16 farmers with 10 students
102	Swachha Bharat Abhiyan	NSS	03.05.2024	45
103	Providing awareness regarding Vermiconmpost and Vermiwash.	School of Agriculture	15.05.2024	8 farmers with 30 students
104	Survey Programme conducted on household consumer expenditure	NSS	15.05.2024	50 volunteers
105	NSS camp at Bahuda Yatra for distribution of Curd Water	NSS	15.07.2024	150
106	Mega Blood Donation camp coordination with National Thalasemia Forum, Odisha and Civil Supply Department, Gunupur	NSS	04.08.2024	80
107	Blood Donation Camp	NSS	08.08.2024	52
108	Spandan Program	NSS	30.03.2024	50
109	Conduct of Awareness program to avoid Sunstroke at Regeda village	NSS	24.03.2024	70
110	Blood Donation on Blood Cancer Day	NSS	28.05.2024	48
111	Van Mahotsav Programme	NSS	04.07.2024	55
112	Spandan Programme on Guru Purnima	NSS	21.07.2024	50
113	Kargil Diwas Celebration	NCC	25.07.2024	30
114	Khelo India Campaign	NSS, NCC	01.08.2024	80
115	Rally on Anti-ragging Day	NSS, NCC	12.08.2024	50 NSS and 25 NCC
116	Kousal Bharat Abhiyan	NSS	17.08.2024	35 NSS Volunteers
117	Bond of protection on the occasion of Rakshya Bandhan	NSS	19.08.2024	59 NSS volunteers
118	Sticky trap demonstration	School of Agriculture	29.08.2024	20 students and 10 farmers
119	Farmer Interaction to mitigate agricultural problems	School of Agriculture	29.08.2024	20 students and 8 farmers
120	Farmer Interaction to mitigate agricultural problems	School of Agriculture	04.09.2024	20 students and 9 farmers

121	Mega Blood Donation Camp	NSS	24.09.2024	50 NSS volunteers and 602 unit of blood collected
122	Organised Plantation program on the theme of "Ek Ped Maa Ki Naam"	NSS	17.09.2024	40 NSS volunteers
123	Organised Mega Tree Plantation Program (200 saplings are planted)	NSS	18.09.2024	100 NSS Volunteers
124	Observation of Gandhi Jayanti and Conducted one Swachh Bharat Program in the Campus	NSS	02.10.2024	25 NSS volunteers
125	Swachh Bharat Program at Jagannath Temple, Gunupur	NSS	27.10.2024	50 NSS Volunteers
126	Observation of Patha Utsav at Sub-Collector Office	NSS	29.10.2024	50 NSS Volunteers

These outreach activities have not only enhanced students' understanding of social challenges but also instilled values of empathy, leadership, and civic responsibility.

2023- NSS Unit of GIET University, Gunupur has received appreciation from Blood Bank, Rayagada, Berhampur, Parlakhemundi and Srikakulum for major contribution

NSS Unit of GIET University, Gunupur has got District Green Champion award for the year 2023

Inauguration of Winter Camp (Female Volunteers)

Inauguration of Winter Camp (Male Volunteers)

Household Survey in Badoguda

Household Survey in Badoguda

Free Medical Camp at Bodoguda

Awareness program on Fire safety and emergency preparedness

Spandan Program

Spandan Program

Van Mohachav Program in the vacant area of the main road, Gunupur on 07.07.2023

Declaration

The head of the institution needs to make a declaration as per the format given below:

I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications, and NBA expert visit guidelines in force as on date and the institute shall fully abide by them.

It is submitted that the information provided in this Self-Assessment Report is factually correct. I understand and agree that appropriate disciplinary action against the Institute will be initiated by the NBA in case any false statement/information is observed during the pre-visit, visit, post-visit, and subsequent to the grant of accreditation.

N V Rao 19/4/2025

Dr. N. V. Jagannadha Rao
Registrar, GIET University

REGISTRAR G.I.E.T. University, Gunupur

Date: 19-Apr-2025

Signature & Name

Place: Gunupur

Head of the Institution with seal