



**VIGNAN'S**  
Foundation for Science, Technology & Research  
(Deemed to be UNIVERSITY)  
-Estd. u/s 3 of UGC Act 1956



## DEPARTMENT OF BIOTECHNOLOGY

### CIRCULAR

Date: 22.03.2024

Department of Biotechnology is going to conduct Board of Studies (BoS) meeting for the B.Tech. Biotechnology programme on **30.03.2024** in online mode from 10.00 AM onward with the following Google meet link: <https://meet.google.com/dim-gwfw-mfo>. All the members are requested to make it convenient to attend the meeting.

#### The members are

S.No.	Name and Designation of member	Position
1.	Prof. T.C. Venkateswarulu, HoD, Department of Biotechnology, VFSTR	Chairperson
2.	Prof. G. Sathya Narayana, Department of Biotechnology, IIT Madras	External member (Academic)
3.	Prof. V. Venkata Dasu Department of Biosciences and Bioengineering, IITG (Guwahati)	External member (Academic)
4.	Dr. Nageswara Rao Pulipati Co-founder & CSO, Bycus Therapeutics Pvt. Ltd., Hyderabad	Industry Expert
5.	Prof. D. Vijaya Ramu, Dean – School of Biotechnology and Pharmaceutical Sciences & Promotions, Collaborations and Faculty Affairs & Department of Biotechnology, VFSTR	Internal member
6.	Prof. S. Asha Department of Biotechnology, VFSTR	Internal member
7.	Dr. A. Venkata Narayana, Associate Professor, Department of Biotechnology, VFSTR	Internal member & Nominee of Dean R & D
8.	Dr. C. David, Associate Professor, Department of Biotechnology, VFSTR	Internal member

9.	Dr. A. Vijaya Sai, Assistant Professor, Department of Biotechnology, VFSTR	Internal member
10.	Dr. Malathi Subramanian, Assistant Professor, Department of Biotechnology, VFSTR	Internal member & Nominee of School Dean
11.	Prof. D. John Babu Department of Biotechnology, VFSTR	Member secretary

**Agenda of the BoS Meeting:**

1. Approval of R22 Revision-1.
2. Discussion of results-FA, SA, Grades, Correlations.
3. Approval of change in L-T-P structure, No. of credits or contents of existing courses.
4. Approval of NPTEL courses / Ratifications of previous approved courses.
5. Approval of Honor/minor/departement elective/open elective courses, if any that are not approved earlier.
6. Discussion of attainments – process, rubrics, CO/PO/PSO and SO values.
7. Any two faculty have to present about best practices of Formative assessment (Pre-T1, T1, T2, T3 and T5).
8. HoD or T&P Coordinator have to present about the best practices of T&P activities.
9. Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2022-23.
10. Any other points, if required.

  
Member Secretary

  
Chairperson



**VIGNAN'S**  
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## DEPARTMENT OF BIOTECHNOLOGY

Date: 30.03.2024

### Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting of B.Tech., Biotechnology programme was conducted on 30.03.2024 in online mode from 10.00 AM onward with the following Google meet link:  
<https://meet.google.com/dim-gwfw-mfo>

#### Agenda of the BoS Meeting:

1. Approval of R22 Revision-1.
2. Discussion of results-FA, SA, Grades, Correlations.
3. Approval of change in L-T-P structure, No. of credits or contents of existing courses.
4. Approval of NPTEL courses / Ratifications of previous approved courses.
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7. Any two faculty have to present about best practices of Formative assessment (Pre-T1, T1, T2, T3 and T5).
8. HoD or T&P Coordinator have to present about the best practices of T&P activities.
9. Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2022-23 AND/OR 2023-24.
10. Any other points, if required.

The following members were present either thorough offline or online.

S.No.	Name and Designation of member	Position	Signature
1.	Prof. T.C. Venkateswarulu, HoD, Department of Biotechnology, VFSTR	Chairperson	



2.	Prof. G. Sathya Narayana, Department of Biotechnology, IIT Madras	External member (Academic)	Attended online
3.	Prof. V. Venkata Dasu Department of Biosciences and Bioengineering, IITG (Guwahati)	External member (Academic)	Attended online
4.	Dr. Nageswara Rao Pulipati Co-founder & CSO, Bycus Therapeutics Pvt. Ltd., Hyderabad	Industry Expert	Attended online
5.	Prof. D. Vijaya Ramu, Dean – School of Biotechnology and Pharmaceutical Sciences & Promotions, Collaborations and Faculty Affairs & Department of Biotechnology, VFSTR	Internal member	<i>D. Vijaya Ramu</i>
6.	Prof. S. Asha Department of Biotechnology, VFSTR	Internal member	<i>S. Asha</i>
7.	Dr. A. Venkata Narayana, Associate Professor, Department of Biotechnology, VFSTR	Internal member & Nominee of Dean R & D	<i>A. Venkata Narayana</i>
8.	Dr. C. David, Associate Professor, Department of Biotechnology, VFSTR	Internal member	<i>C. David</i>
9.	Dr. A. Vijaya Sai, Assistant Professor, Department of Biotechnology, VFSTR	Internal member	<i>A. Vijaya Sai</i>
10.	Dr. Malathi Subramanian, Assistant Professor, Department of Biotechnology, VFSTR	Internal member & Nominee of School Dean	<i>Malathi</i>
11.	Prof. D. John Babu Department of Biotechnology, VFSTR	Member secretary	<i>D. John Babu</i>



Chairperson Dr. T.C. Venkateswarulu, Professor and Head, Department of Biotechnology, VFSTR opened the meeting by welcoming and introducing the external members, invitees to the internal members and explained the agenda points of the meeting.

**The following points were discussed in the BoS meeting:**

1. Approval of R22 Revision-1.
2. Discussion of results-FA, SA, Grades, Correlations.
3. Approval of change in L-T-P structure, No. of credits or contents of existing courses.
4. Approval of NPTEL courses / Ratifications of previous approved courses.
5. Approval of Honor/minor/department elective/open elective courses, if any that are not approved earlier.
6. Discussion of attainments – process, rubrics, CO/PO/PSO and SO values.
7. Any two faculty have to present about best practices of Formative assessment (Pre-T1, T1, T2, T3 and T5).
8. HoD or T&P Coordinator have to present about the best practices of T&P activities.
9. Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2022-23.

**The following resolutions made after the discussion:**

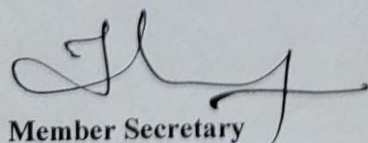
1. The committee reviewed and approved the course structure of B.Tech Biotechnology program (CR24) based on the analysis of feedback collected from various stake holders by DAAC of Department of Biotechnology of VFSTR.
2. A new course, Design Thinking and Engineering Orientation, course content was reviewed and approved by BoS members.
3. The professional core courses such as Vaccine Development and Production, Plant Tissue Culture and Transgenics have been reviewed and approved by BoS.
4. Prof. Venkata Das V., IIT Guwahati, suggested to include the subject namely; Ethics and IPR in the fourth year first semester under the section of Humanities to emphasize ethical practices in education, research, and industries.
5. Prof. Venkata Das V., also suggested to include Bioethics and Biosafety under Department Electives.



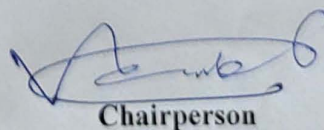
6. Prof. Venkata Das V., appreciated the induction of NEP2020 components in R22.
7. New department electives such as Stem Cell and Regenerative Medicine, Infectious Diseases and Vaccinology, Molecular Genetics and Diagnostics, Population Genetics and Phylogeny, Biopython, and Bimolecular Simulations and Modelling, are reviewed and approved by the BoS.
8. Dr. Nageswa Rao P, Co-Founder and CSO, Bycus Therapeutics, Hyderabad suggested to conduct mock drills with one-page Biodata, Covering Letter and Dress Code for better performance in recruitment.
9. Dr. Nageswa Rao P, suggested to include GLP content in the course namely RACT.
10. The course content modified in Bioinformatics, Cancer Biology and Therapy was reviewed and approved by the BoS members.
11. BoS members reviewed and approved the NPTEL courses proposed by the DAAC.
12. The members elaborately discussed summative question papers pattern and assessment and appreciated the philosophy of R22 curriculum and assessment pattern.

Based on the suggestions given by the members, the Chairperson of BoS told that, those fruitful suggestions would be incorporated appropriately in the curriculum and syllabi of the revised regulation R22 and this will be recommended to the Academic Council of VFSTR for the approval.

There being no further points for discussion, the Chairperson thanks all the external, internal, invited members and announced that the meeting was adjourned.

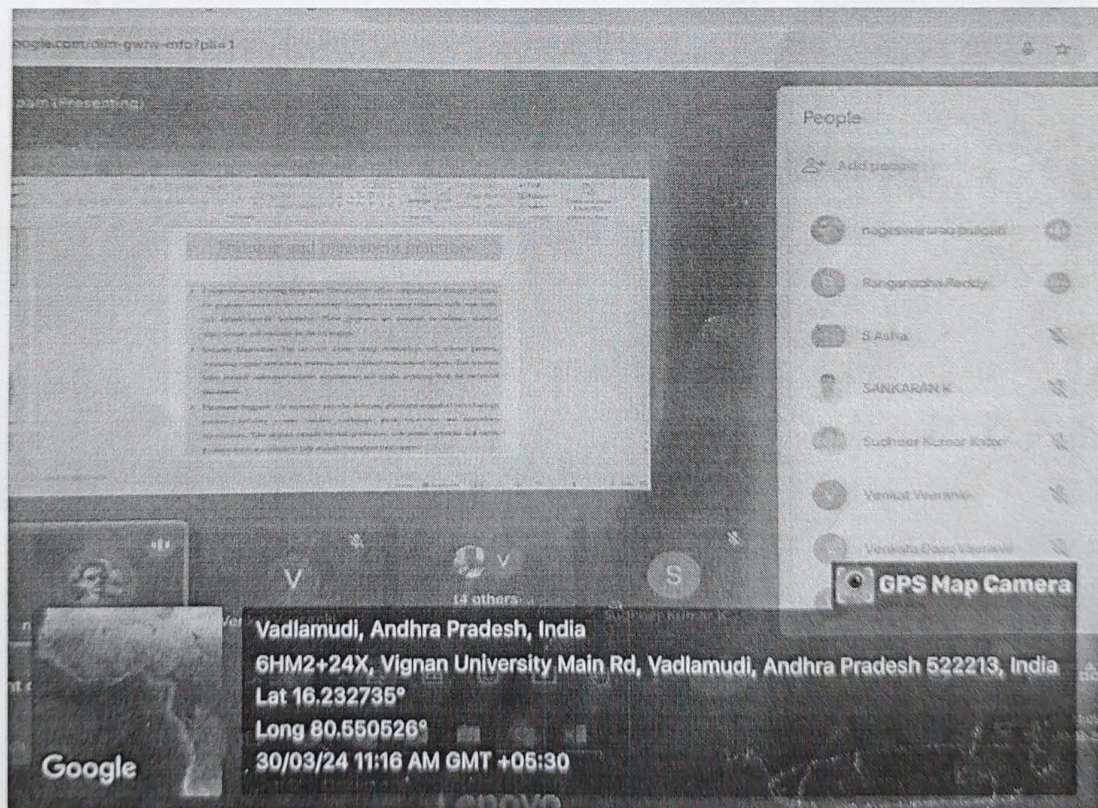
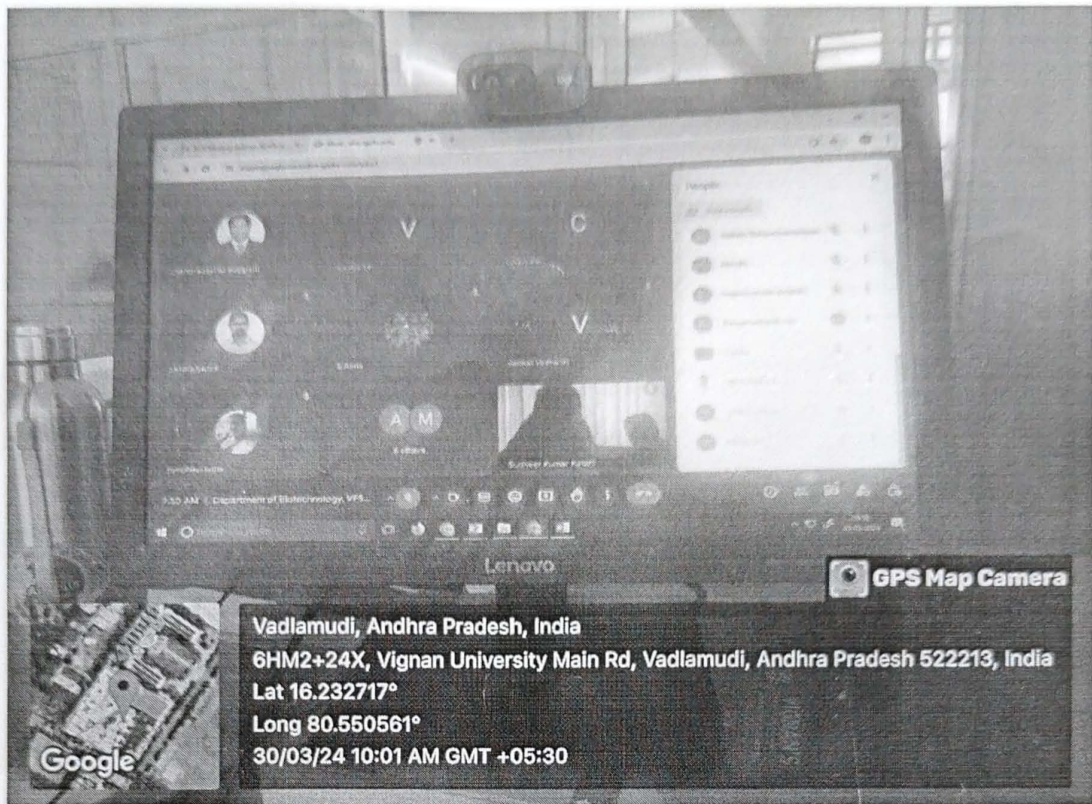


Member Secretary



Chairperson







**DEPARTMENT OF BIOTECHNOLOGY**

**APPENDIX I**

**B.Tech Biotechnology : Curriculum Structure**

**I Year I Semester**

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Mathematics – I / Mathematics – II	3	2	0	4	Basic Sciences	Department of Mathematics
2	Physics / Chemistry	3	0	2	4	Basic Sciences	Department of Physics/Chemistry
3	Basic of Electrical & Electronics Engineering/ Engineering Graphics	2	0	2	3	Basic Engineering	Department of EEE
4	Programming in C	1	0	4	3	Basic Engineering	Department of T&P
5	IT Tools & Cyber security	0	2	2	2	Basic Engineering	Department of T&P
6	English Proficiency & Communication Skills (PET)	0	0	2	1	Humanities	Department of T&P
7	Environmental Studies / Management Studies	2	2	0	3	Basic Sciences / Humanities	Department of Chemistry/Management
8	Physical Fitness, Sports & Games – I	0	0	3	1	Binary grade	Department of PED
9	Constitution of India	0	2	0	1	Binary grade	Department of T&P
10	Orientation Session	0	0	6	3	Binary grade	
	<b>Total</b>	<b>11</b>	<b>8</b>	<b>15</b>	<b>20</b>		
		<b>34</b>			<b>20</b>		



# I Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Mathematics – I / Mathematics – II	3	2	0	4	Basic Sciences	Department of Mathematics
2	Physics / Chemistry	3	0	2	4	Basic Sciences	Department of Physics/Chemistry
3	Basic of Electrical & Electronics Engineering/ Engineering Graphics	2	0	2	3	Basic Engineering	Department of EEE
4	Competitive coding	0	2	4	3	Basic Engineering	Department of T&P
5	Technical English Communication	2	0	2	3	Humanities	Department of English
6	Environmental Studies / Management Studies	2	2	0	3	Basic Sciences / Humanities	Department of Chemistry/Management
7	Universal Human Values	0	2	0	1	Binary grade	Department of T&P
8	Indian Knowledge Systems	0	2	0	1	Binary grade	Department of T&P
9	Orientation Session	0	0	6	3	Binary grade	
	<b>Total</b>	<b>12</b>	<b>10</b>	<b>10</b>	<b>20</b>		
		<b>32</b>					



## II Year I Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Biostatistics and Design of Experiments	3	2	0	4	Basic Sciences	Departments of Statistics and BT
2	Cell and Molecular Biology	2	0	2	3	Basic Sciences	Department of BT
3	Data Structures and Algorithms	2	2	2	4	Basic Engineering	Department of T&P
4	Biochemistry and Enzymology	3	0	2	4	Professional core	Department of BT
5	Chemical Engineering Principles in Biotechnology	3	0	2	4	Professional core	Department of BT
6	Microbiology & Fermentation Technology	3	0	2	4	Professional core	Department of BT
7	Design Thinking & Engineering Orientation	0	0	2	1	Basic Engineering	Department of BT
8	Life Skills-I	0	0	2	1	Binary grade	
	<b>Total</b>	<b>16</b>	<b>4</b>	<b>14</b>	<b>24</b>		
	<b>Total</b>	<b>34</b>			<b>25</b>		



## II Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Immunology and Immunoinformatics	3	0	2	4	Basic Sciences	Department of BT
2	Practicing Data Structures	0	0	2	1	Basic Engineering	Department of T&P
3	Bioanalytical Techniques	3	0	2	4	Professional core	Department of BT
4	Industrial Biotechnology	3	0	2	4	Professional core	Department of BT
5	Transport phenomena in Biotechnology	3	0	2	4	Professional core	Department of BT
6	Open Elective – 1	2	2	0	3	Open Elective	
	Field/Inter-Disciplinary Project	0	0	2	1	Project	Department of BT
	<b>Total</b>	<b>14</b>	<b>2</b>	<b>12</b>	<b>21</b>		
	<b>Minor / Honors – 1</b>	<b>3</b>		<b>2</b>	<b>4</b>		
	<b>Total</b>	<b>33</b>			<b>25</b>		



### III Year I Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Soft Skills Lab	0	0	2	1	Humanities	Department of T&P
2	Bioprocess Engineering	3	0	2	4	Professional core	Department of BT
3	Genetic Engineering	3	0	2	4	Professional core	Department of BT
4	Department Elective – 1	3	2	0	4	Department Elective	Department of BT
5	Department Elective – 2	2	2	0	3	Department Elective	Department of BT
6	Open Elective – 2	2	2	0	3	Open Elective	
7	Industry interface course (Modular course)	1	0	0	1	Binary Grades	Department of BT
8	BEC Certification	-	-	-	1		Department of English
	<b>Total</b>	<b>14</b>	<b>6</b>	<b>6</b>	<b>21</b>		
	<b>Minor / Honors – 2</b>	<b>3</b>		<b>2</b>	<b>4</b>		
	<b>Total</b>	<b>31</b>			<b>26</b>		

### III Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Quantitative aptitude & Logical reasoning	1	2	0	2	Humanities	Department of T&P
2	Bioreaction Engineering	3	0	2	4	Professional core	Department of BT
3	Plant Tissue Culture and Transgenics	3	0	2	4	Professional core	Department of BT
	Vaccine Development & Production	2	0	2	3	Professional core	Department of BT
4	Department Elective – 3	3	2	0	4	Department Elective	Department of BT
5	Open Elective – 3	2	2	0	3	Open Elective	
6	Inter-Disciplinary Project Phase-II	0	0	2	1	Project	Department of BT
	<b>Total</b>	<b>14</b>	<b>6</b>	<b>8</b>	<b>21</b>		
	<b>Minor / Honors – 3</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>4</b>		
	<b>Total</b>	<b>33</b>			<b>25</b>		



IV Year I Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Ethics and IPR	1	2	0	2	Humanities	Department of BT
2	Down Stream Processing	2	0	2	3	Professional core	Department of BT
3	Bioinformatics	3	0	2	4	Professional core	Department of BT
4	Department Elective – 4	3	2	0	4	Department Elective	Department of BT
5	Department Elective – 5	3	2	0	4	Department Elective	Department of BT
6	Department Elective – 6	3	2	0	4	Department Elective	Department of BT
	<b>Total</b>	<b>15</b>	<b>8</b>	<b>4</b>	<b>21</b>		
	<b>Minor / Honors – 4</b>	<b>3</b>		<b>2</b>	<b>4</b>		
	<b>Total</b>	<b>32</b>			<b>24</b>		

#### IV Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Internship / Project Work		2#	22	12	Project	Department of BT
	<b>Total</b>				<b>12</b>		
2	Minor / Honors – 5 (for project)		2	6	4	Theory course may be also offered	Department of BT
	<b>Total</b>				<b>16</b>		

# For interaction between Guide and students



### List of Department Elective Courses

	Odd Semester	Even semester
Course-1	3D Bioprinting	Algorithms in Bioinformatics
Course-2	Biodiversity and Conservation	Biosensors
Course-3	Bioenergetics	Molecular Genetics and Diagnostics
Course-4	Biopharmaceutical Technology	Cancer Biology and Therapy
Course-5	Genetics	Computer Aided Drug Design
Course-6	Genomics and Proteomics	Handling of Animals for Experiments
Course-7	Instrumentation and Process Control	Health Economics
Course-8	Metabolic Engineering	Health Informatics
Course-9	Phage Display	Population Genetics and Phylogeny
Course-10	Phytopharma	Nanobiotechnology
Course-11	Plant Taxonomy, Computer Applications and DNA Barcoding	BioPython
Course-12	Stem Cells and Regenerative Medicine	Regulatory Affairs and Clinical Trails
Course-13	Solid Waste Management	Systems Biology
Course-14	Infectious Diseases and Vaccinology	Bioprocess Economics, Modelling and Simulations
Course-15	3D Bioprinting	Biomolecular Simulations and Modelling

### List of Open Elective Courses

	<b>MODERN BIOLOGY FOR ENGINEERS</b>
Course-1	Biology for Engineers
Course-2	Bioplastics and Bio-composites
Course-3	Computational Biology
Course-4	Biosensors

### List of Honour/Specialization Courses

	<b>FUNCTIONAL FOODS AND METAGENOMICS</b>
Course-1	Probiotics and Functional Foods
Course-2	Food Biotechnology
Course-3	Metagenomics
Course-4	Next Generation Sequencing
Course-5	Project / Open source – Swayam/NPTEL

### List of Minor Courses

	<b>COMMUNITY HEALTH</b>
Course-1	Molecular diagnostics
Course-2	Community medicine and Public Health
Course-3	Vaccine Preventable Diseases
Course-4	Medicinal Plants and Ethnobotany
Course-5	Project/Vector Borne Diseases

  
Chairperson