VIGNAN'S
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–Estd. u/s 3 of UGC Act 1956

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DEPARTMENT OF BIOTECHNOLOGY

CIRCULAR

Date: 22.03.2024

Department of Biotechnology is going to conduct Board of Studies (BoS) meeting for the B.Tech. Bioinformatics programme on **30.03.2024** in online mode from 11.30 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. Pritish Kumar Varadwaj, Department of Applied Science, IIIT Allahabad	External member (Academic)
3.	Dr. Kalyani Dhusia, Staff Scientist, University of Arkansas Medical Sciences, USA	External member (Academic)
4.	Dr. Amit Dubey, Senior Scientist, Department of computational Chemistry and drug discovery division, Quanta Calculus, Greater Noida	Industry Expert - I
5.	Dr.Madhu Babu Sr. Scientist., Omics NextGen Laboratories., Bhimavaram	Industry Expert - II
6.	Prof. D. Vijaya Ramu, Dean – School of Biotechnology and Pharmaceutical Sciences & Promotions, Collaborations and Faculty Affairs & Department of Biotechnology, VFSTR	Internal member
7.	Prof. S. Asha Department of Biotechnology, VFSTR	Internal member
8.	Dr. M. Viswajith, Assistant Professor, Department of Biotechnology, VFSTR	Internal Member, Nominee of School Dean
9.	Dr. K. Abraham Peele, Associate Professor, Department of Biotechnology, VFSTR	Internal Member, Nominee of R & D

10.	Dr. S. Anil Kumar, Associate. Professor, Department of Biotechnology, VFSTR	Internal member
11.	Dr. K. Sudheer Kumar, Assistsnt Professor, Department of Biotechnology, VFSTR	Internal member
12.	Dr. A. Ranganadha Reddy, Associate Professor, 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/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 AND/OR 2023-24.

10. Any other points, if required.
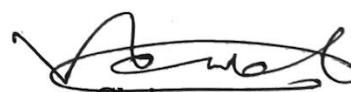
Member Secretary   **Chairperson**

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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., Bioinformatics programme was conducted on 30.03.2024 in online mode from 11.30 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.

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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. Pritish Kumar Varadwaj, Department of Applied Science, IIIT Allahabad	External member (Academic)	Attended online
3.	Dr. Kalyani Dhusia, Staff Scientist, University of Arkansas Medical Sciences, USA	External member (Academic)	Attended online
4.	Dr. Amit Dubey, Senior Scientist, Department of computational Chemistry and drug discovery division, Quanta Calculus, Greater Noida	Industry Expert - I	Attended online
5.	Dr.Madhu Babu Sr. Scientist., Omics NextGen Laboratories., Bhimavaram	Industry Expert - II	Attended online
6.	Prof. D. Vijaya Ramu, Dean – School of Biotechnology and Pharmaceutical Sciences & Promotions, Collaborations and Faculty Affairs & Department of Biotechnology, VFSTR	Internal member	*(signature)*
7.	Prof. S. Asha Department of Biotechnology, VFSTR	Internal member	*(signature)*
8.	Dr. M. Viswajith, Assistant Professor, Department of Biotechnology, VFSTR	Internal Member, Nominee of School Dean	*(signature)*
9.	Dr. K. Abraham Peele, Associate Professor, Department of Biotechnology, VFSTR	Internal Member, Nominee of R & D	*(signature)*
10.	Dr. S.Anil Kumar, Associate. Professor, Department of Biotechnology, VFSTR	Internal member	*(signature)*
11.	Dr. K. Sudheer Kumar, Assistsnt Professor, Department of Biotechnology, VFSTR	Internal member	*(signature)*
12.	Dr. A. Ranganadha Reddy, Associate Professor, Department of Biotechnology, VFSTR	Member secretary	*(signature)*

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 Bioinformatics program for the revised R22 curriculum 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. Prof. Pritish Kumar Varadawaj, IIIT Allahabad and other BoS members reviewed and approved the course content of "Microbiology and Metagenomics", "Biopython".

4. Prof. Pritish Kumar Varadawaj, also suggested to change the L-T-P for "Could ~~Cloud~~ computing for Bioinformatics" as course is more practice oriented.

5. Dr. Amit Dubey, Sr. Scientist, Quanta Calculus, Noida, agreed with the changes suggested Prof. Pritish Kumar Varadawaj in "NGS Data Analysis Using R."

6. Dr.Madhu Babu, Sr. Scientist from OMICS Next Gen Labs, suggested to include the statistical in "NGS Data Analysis using R".

7. BoS members reviewed and approved the NPTEL courses proposed by the DAAC.

8. 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
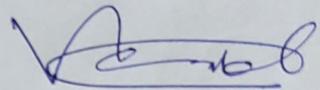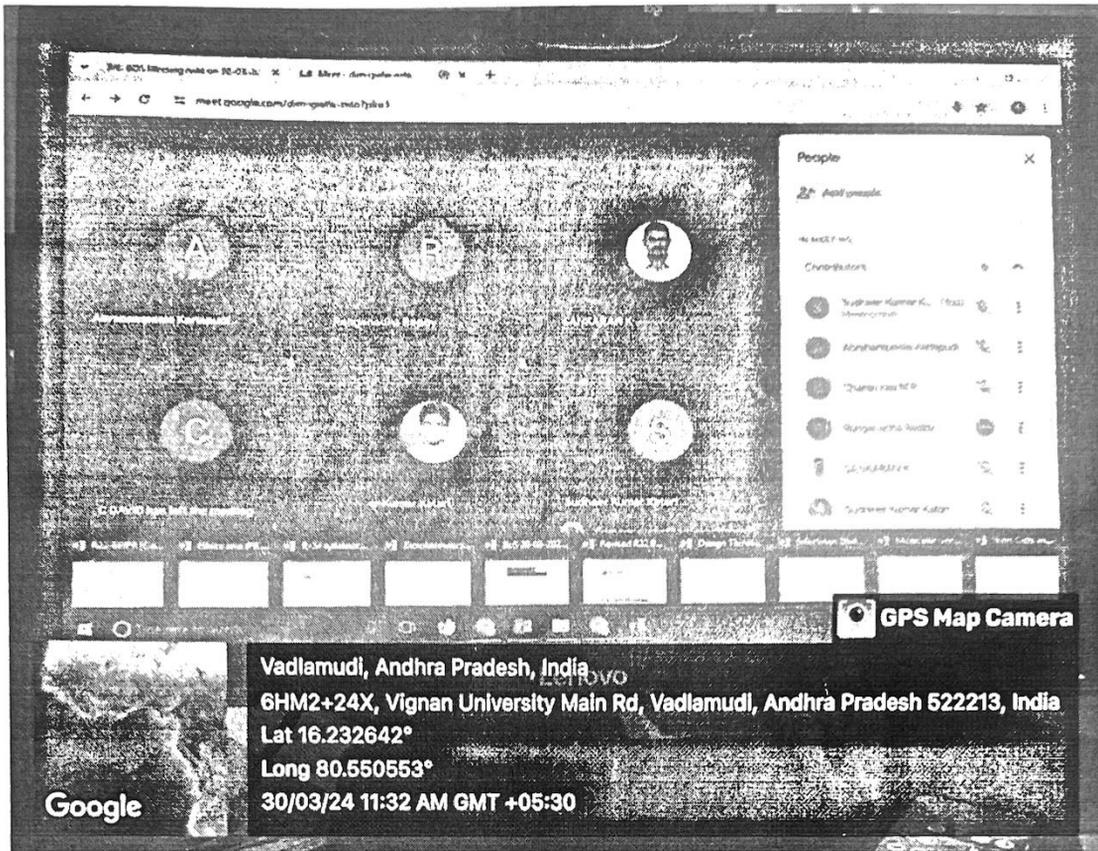
Chairperson

GPS Map Camera

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6HM2+24X, Vignan University Main Rd, Vadlamudi, Andhra Pradesh 522213, India
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Long 80.550553°
30/03/24 11:32 AM GMT +05:30
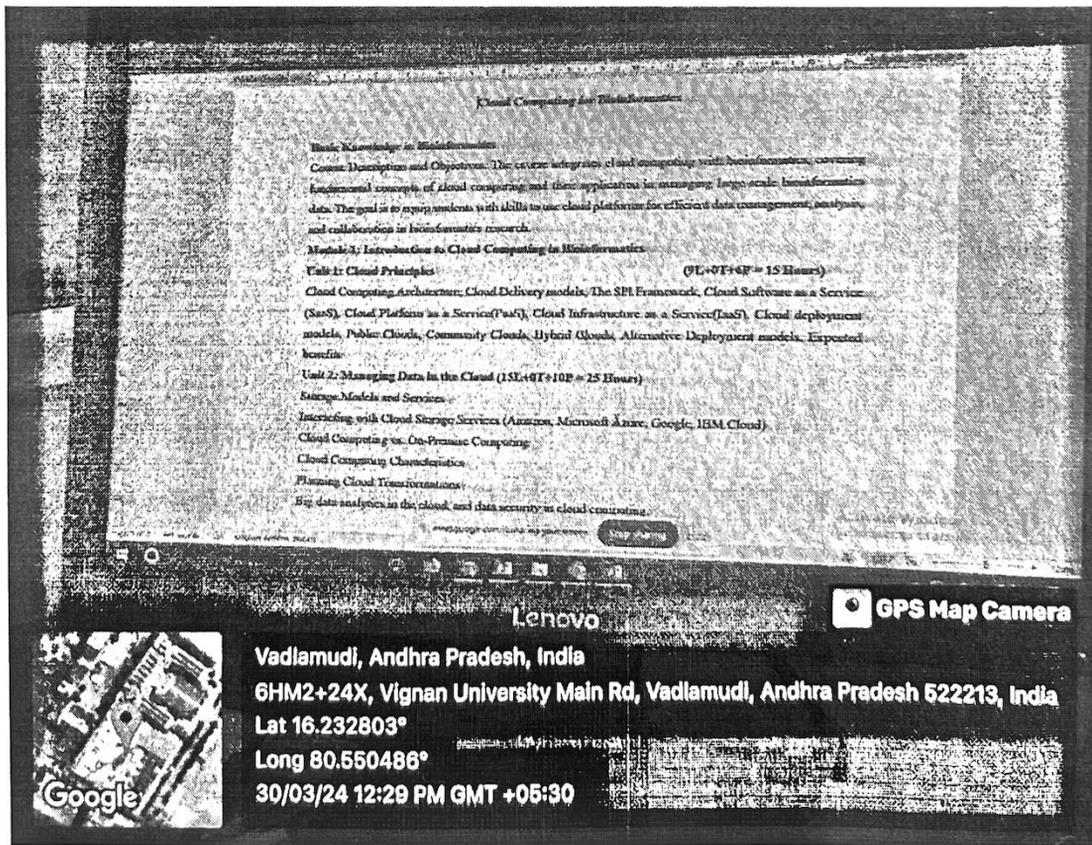
GPS Map Camera

Vadlamudi, Andhra Pradesh, India
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APPENDIX I

B.Tech Bioinformatics : 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	
	Total	11	8	15	20		
			34		20		

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	
	Total	12	10	10	20		
			32				

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	BioPython	3	0	2	4	Professional core	Department of BT
6	Microbiology and Metagenomics	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	
	Total	16	4	14	24		
	Total		34		25		

II Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	NGS Data Analysis Using R	3	0	2	4	Basic Sciences	Department of BT
2	Practicing Data Structures	0	0	2	1	Basic Engineering	Department of T&P
3	Computer Aided Drug Design	3	0	2	4	Professional core	Department of BT
4	Algorithms in Bioinformatics	3	0	2	4	Professional core	Department of BT
5	Biological Databases and Management	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
	Total	**14**	**2**	**12**	**21**		
	Minor / Honors – 1	**3**		**2**	**4**		
	Total	**33**			**25**		

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	Immunology and Immunoinformatics	3	0	2	4	Professional core	Department of BT
3	Genomics and Proteomics	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
	Total	14	6	6	21		
	Minor / Honors – 2	3		2	4		
	Total		31		26		

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	Biomolecular Simulations and Modelling	3	0	2	4	Professional core	Department of BT
3	Data mining and Machine Learning in Bioinformatics	3	0	2	4	Professional core	Department of BT
4	Population Genetics and Phylogeny	2	0	2	3	Professional core	Department of BT
5	Department Elective – 3	3	2	0	4	Department Elective	Department of BT
6	Open Elective – 3	2	2	0	3	Open Elective	
7	Inter-Disciplinary Project Phase-II	0	0	2	1	Project	Department of BT
	Total	**14**	**6**	**8**	**21**		
	Minor / Honors – 3	**3**	**0**	**2**	**4**		
	Total	**33**			**25**		

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	Health Informatics	2	0	2	3	Professional core	Department of BT
3	Systems Biology	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
	Total	15	8	4	21		
	Minor / Honors – 4	3		2	4		
	Total	32			24		

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
	Total				12		
2	Minor / Honors – 5 (for project)		2	6	4	Theory course may be also offered	Department of BT
	Total				16		

For interaction between Guide and students

List of Department Elective Courses

	Odd Semester	Even semester
Course-1	Bioprocess Economics, Modelling and Simulations	Biological Big Data Management and Analytics
Course-2	Clinical Data Management	Cheminformatics and QSAR
Course-3	Expression Data and Image Analysis	Good Laboratory Practices
Course-4	Health Analytics	Synthetic biology
Course-5	Neural Networks	3D Bioprinting
Course-6	Probiotics and Food Microbiology	Bioethics and Intellectual Property Rights
Course-7	Bioenergetics	Phage Display
Course-8	Biopharmaceutical Technology	Phytopharma
Course-9	Metabolic Engineering	Plant Tissue Culture and Transgenics
Course-10	Infectious Diseases and Vaccinology	Biosensors
Course-11	Regulatory affairs and clinical trails	BioJAVA
Course-12	Bioprocess Economics, Modelling and Simulations	Cancer Genomics
Course-13	Clinical Data Management	Laboratory Information Management System
Course-14	Expression Data and Image Analysis	Interactomics
Course-15	Health Analytics	Environmental Informatics

List of Open Elective Courses

	Drug Design
Course-1	Elements of Bioinformatics
Course-2	Cheminformatics and QSAR
Course-3	Computer-Aided Drug Design
Course-4	Computational Biology
Course-5	Vaccine Design

List of Honour/Specialization Courses

	OMICS
Course-1	Pharmacogenomics
Course-2	Metabolomics
Course-3	Comparative & Functional Genomics
Course-4	Cloud computing for Bioinformatics
Course-5	Project / Open source – Swayam/NPTEL

List of Minor Courses

	FORENSIC GENOMICS
Course-1	Elements of Biotechnology and Bioinformatics
Course-2	Fundamentals of Forensic Sciences
Course-3	Next Generation Sequencing
Course-4	Forensic Genomics
Course-5	Project/AI in Genomics and Drug design

Chairperson