VIGNAN'S
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DEPARTMENT OF BIOTECHNOLOGY

Date: 17.06.2022

Minutes of Board of Studies Meeting

Board of Studies (BoS) meeting of B.Tech., Biotechnology programme was conducted on 17.06.2022 in blended mode from 09.00 am onward in VSF 05, 2nd floor, U Block VFSTR and also with the following Zoom link: https://us06web.zoom.us/j/83552270616.

Agenda of the BoS Meeting:

1. To Discuss and finalize the curriculum structure and detailed syllabus of B.Tech., Biotechnology Programme for the regulation 2022.
2. To approve the R22 curriculum and syllabus of B.Tech., Biotechnology Programme and recommend to the Academic council.
3. Any other points with the permission of Chairperson.

The following members were present either thorough offline or online.

S.No	Name	Members	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.	Dr.Vijayalakshmi Venkatesan, Scientist 'G' (Retired), National Institute of Nutrition, Hydearbad	External member (Research)	Attended online
4.	Prof. Raj Mohan B, Department of Chemical Engineering, NIT Suratkhal	External member (Academic)	B.R.Mohan
5.	Prof. S. Krupanidhi, Dean – School of Natural Sciences and Applied Technologies,	Internal member	S.Krupanidhi

	VFSTR		
6.	Prof. P.B. Kavi Kishor, Research Advisor, Department of Biotechnology, VFSTR	Internal member	
7.	Prof. D. Vijaya Ramu, Dean – Promotions, Collaborations and Faculty Affairs & Department of Biotechnology, VFSTR	Internal member	
8.	Prof. S.Asha, Department of Biotechnology, VFSTR	Internal member	
9.	Dr. A. Ranga Rao, Associate Professor Department of Biotechnology, VFSTR	Internal member	
10.	Dr. N.S. Sampath Kumar, Associate Professor, Department of Biotechnology, VFSTR	Internal member	
11.	Dr.M. Indira, Associate Professor Department of Biotechnology, VFSTR	Internal member	
12.	Dr. Abhinav Parashar, Assistant Professor, Department of Biotechnology, VFSTR	Internal member	
13.	Dr. Vijaya Sai Ayyagari, Assistant Professor, Department of Biotechnology, VFSTR	Internal member	
14.	Prof. D. John Babu, Department of Biotechnology VFSTR	Member secretary	

The following members have taken leave of absence:

1. Dr. A. Ranga Rao

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. Chairperson presented about the *NEP 2020 Compliant Regulation - R22* which emphasis on creating *learning centric* (continuous learning and continuous assessment model), offering B.Tech., B.Tech. with Honours/

Research Honours/ Minor/ Add-on Diploma,*Dual degree (B.Tech + M.Tech/MBA)* providing multiple entry and multiple exits.

The following points were discussed in the BoS meeting:

1. Regulation R22.
2. Curriculum structure with credits, credits distribution.
3. 2 Modules instead of 5 units.
4. Assessment methods (Formative & Summative; 60:40).
5. Grading Schemes (O, S, A, B, C, D).
6. Pool of Department electives.
7. Open elective courses floated.
8. Mino/Honor courses.

The following resolutions made after the discussion:

1. BoS Members approved the revised regulations, curriculum structure, syllabus of B.Tech., Biotechnology programme and it follows based on the NEP 2020. Curriculum structure is provided in Appendix-I.
2. Major restructuring has taken place in the curriculum which is oriented towards continuous learning and assessment based on Module structure.
3. Major reformation has taken place in the curriculum by offering Honours/Specialization degree or Minor degree through 20 more credits with additional courses.
4. The curriculum is encompassing the courses that enable employability or entrepreneurship or skill development, provided in Appendix- II.
5. The significant changes are made in the content of all courses and hence the courses are considered as new courses provided in Appendix- III.
6. Stakeholders feedback is analyzed thoroughly and the curriculum follows the choice based credit system (CBCS).
7. All the students of R21 regulations is migrated to R22 curriculum from 2nd year 1st semester onwards. To maintain the balance between total credits and courses for award of degree we have make changes in the following courses
   - Bioproducts and Bioenterpreneurship (4 credits) offered in 1(2) of R21 Regulations may be moved to Add-on Credits".

- Physical Fitness, Sports & Games-II (1 Credit) offered in 1(2) of R21 Regulations may be moved to "Add-on Credit".

8. Total average percentage of syllabus revised was 62.59% compared to previous curriculum.
9. Prof. Vijaya Lakshmi an external member suggested to add a course on "Pre & Probiotics. Later in the discussion, she was convinced about the course that we are offering namely "Probiotics & Food Microbiology".
10. Prof. Vijaya Lakshmi suggested a course on "Stem cells" and 3D Bioprinting". Both these courses are figured among the pool of electives. Particularly, the topics related to Stem Cell are included in the course namely Methods and Practices of Animal and Human cell culture given under pool of electives.
11. Prof. S. Krupanidhi, sought the permission of experts to adopt the course namely "Biostastics and Design of Experiments" in B.Tech Biotechnology. This course was suggested by Prof. Mukesh Doble for B. Tech Bioinformatics program. In response members did not raise any objection.
12. Prof. Vijay Lakshmi advised to add "Health Economics" in pool of electives and suggested to get a model syllabus from ICMR website. This suggestion was well taken. We collected the syllabus from Master of Science - Health Economics and Technology Assessment and submitted to madam for confirmation.
13. Prof. Raja Mohan, an external member, suggested to include "Biosensors" as open elective course for other department students eventhough it is being offered as department elective course.
14. The members accepted all suggested changes in B.Tech Biotechnology program and recommended to implement from 2022 batch onwards.

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 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

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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	Elementary Mathematics	3	2	0	4	Basic Sciences	Department of Mathematics
2	Applied Physics	2	0	2	3	Basic Sciences	Department of Physics
3	Basics of Electrical & Electronics Engineering	2	0	2	3	Basic Engineering	Department of EEE
4	IT Workshop & Bioproducts	1	0	4	3	Basic Engineering	Departments of BT
5	Programming in C	2	0	4	4	Basic Engineering	Department of T&P
6	English Proficiency & Communication Skills	0	0	2	1	Humanities	Department of T&P
7	Physical Fitness, Sports & Games – I	0	0	3	1	Binary grade	Department of PED
8	Constitution of India	0	2	0	1	Binary grade	Department of T&P
	Total	**10**	**4**	**17**	**20**		
		31			**20**		

I Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Matrices and Calculus	3	2	0	4	Basic Sciences	Department of Mathematics
2	Organic Chemistry	2	0	2	3	Basic science	Department of Chemistry
3	Basic Coding Competency	0	1	3	2	Basic Engineering	Department of T&P
4	Engineering Graphics	2	0	2	3	Basic Engineering	Department of Mechanical Engineering
5	Technical English Communication	2	0	2	3	Humanities	Department of English
6	Good Laboratory Practices	2	2	0	3	Professional core	Department of Biotechnology
7	Physical Fitness, Sports & Games – II	0	0	3	1	Binary grade	Department of PED
	Orientation Session	0	0	6	3	Binary grade	
	Total	**11**	**5**	**18**	**22**		
		34					

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	Data Structures	2	2	2	4	Basic Engineering	Department of T&P
3	Cell and Molecular Biology	3	0	2	4	Professional core	Department of BT
4	Biochemistry and Enzymology	3	0	2	4	Professional core	Department of BT
5	Chemical Engineering Principles in Biotechnology	2	0	2	3	Professional core	Department of BT
6	Microbiology & Fermentation Technology	3	0	2	4	Professional core	Department of BT
	Life Skills-I	0	0	2	1	Binary grade	
	Total	**16**	**4**	**12**	**24**		
	NCC/ NSS/ SAC/ E-cell/ Student Mentoring/ Social activities/ Publication with good impact factor (Only 2 students can claim 1 paper /patent). These credits maybe earned on or before the end of IV semester	0	0	0	**1**	Floating credits Binary grade	
	Total	**32**			**25**		

II Year II Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Advanced Coding Competency	0	0	2	1	Basic Engineering	Department of T&P
2	Professional Communication Laboratory	0	0	2	1	Humanities	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	Environmental Studies	1	1	0	1	Basic Sciences	Department of Chemistry
6	Management Science	2	2	0	3	Humanities	Department of Management studies
7	Department Elective – 1	2	2	0	3	Department Elective	Department of BT
8	Open Elective – 1	2	2	0	3	Open Elective	
9	Life Skills-II	0	0	2	1	Binary grade	
	Total	**13**	**7**	**10**	**21**		
	Minor / Honors – 1	3		2	**4**		
	Total	**35**			**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	Bioprocess Engineering	3	0	2	4	Professional core	Department of BT
3	Genetic Engineering	3	0	2	4	Professional core	Department of BT
4	Heat and Mass Transfer	2	0	2	3	Professional core	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	Inter-Disciplinary Project Phase-I	0	0	2	0	Project	Department of BT
	Total	**13**	**4**	**10**	**19**		
	NCC/ NSS/ SAC/ E-cell/ Student Mentoring/ Social activities/ Publication with good impact factor (Only 2 students can claim 1 paper /patent). These credits maybe earned on or before the end of VI semester	0	0	0	**1**	Floating credits Binary grade	
	Minor / Honors – 2	**3**		**2**	**4**		
	Total	**32**			**24**		

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	Bioinformatics	3	0	2	4	Professional core	Department of BT
3	Bioreaction Engineering	3	0	2	4	Professional core	Department of BT
4	Department Elective – 3	2	2	0	3	Department Elective	Department of BT
5	Department Elective – 4	2	2	0	3	Department Elective	Department of BT
6	Open Elective – 3	2	2	0	3	Open Elective	
7	Inter-Disciplinary Project Phase-II	0	0	2	2	Project	Department of BT
	Total	**13**	**8**	**6**	**21**		
	Minor / Honors – 3	**3**	**0**	**2**	**4**		
	Total	**32**			**25**		

IV Year I Semester

Sl. No.	Course Title	L	T	P	C	Remarks	Course offered by
1	Down Stream Processing	3	0	2	4	Professional core	Department of BT
2	Immunology and Immunoinformatics	3	0	2	4	Professional core	Department of BT
3	Department Elective – 5	2	2	0	3	Department Elective	Department of BT
4	Department Elective – 6	2	2	0	3	Department Elective	Department of BT
5	Department Elective – 7	2	2	0	3	Department Elective	Department of BT
6	Department Elective – 8	2	2	0	3	Department Elective	Department of BT
	Total	**14**	**8**	**4**	**20**		
	Minor / Honors – 4	**3**		**2**	**4**		
	Total	**31**			**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	3D Bioprinting	Algorithms in Bioinformatics
Course-2	Biodiversity and Ecology	Biosensors
Course-3	Bioenergetics	Cancer Biology and Therapy
Course-4	Bioethics and Intellectual Property Rights	Computer Aided Drug Design
Course-5	Biopharmaceutical Technology	Handling of Animals for Experiments
Course-6	Genetics	Health Economics
Course-7	Genomics and Proteomics	Health Informatics
Course-8	Instrumentation and Process Control	Methods and Practice of Animal and Human Cell Culture
Course-9	Metabolic Engineering	Molecular Interactions
Course-10	Phage Display	Molecular Phylogenetics
Course-11	Phytopharma	Nanobiotechnology
Course-12	Plant Taxonomy, Computer Applications and DNA Barcoding	Python Programming for Biotechnologists
Course-13	Plant Tissue Culture and Transgenics	Regulatory affairs and clinical trails
Course-14	Solid Waste Management	Systems Biology
Course-15	Vaccinology	Bioprocess Economics, Modeling and Simulations

List of Open Elective Courses

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

List of Honour/Specialization Courses

	FUNCTIONAL FOODS AND METAGENOMICS
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

	COMMUNITY HEALTH
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

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APPENDIX II

List of Courses that Enables Employability or Entrepreneurship or Skill Development

S. No.	Year and Semester	Course Title	Employability / Entrepreneurship / Skill development
1.	I Year I Semester	Elementary Mathematics	Skill development
2.	I Year I Semester	Applied Physics	Skill development
3.	I Year I Semester	Basics of Electrical & Electronics Engineering	Skill development
4.	I Year I Semester	IT Workshop & Bioproducts	Skill development
5.	I Year I Semester	Programming in C	Employability
6.	I Year I Semester	English Proficiency & Communication Skills	Skill development
7.	I Year I Semester	Constitution of India	Skill development
8.	I Year II Semester	Matrices and Differential Equations	Skill development
9.	I Year II Semester	Organic Chemistry	Skill development
10.	I Year II Semester	Coding Competency (Basic)	Employability
11.	I Year II Semester	Engineering Graphics	Skill development
12.	I Year II Semester	Technical English Communication	Entrepreneurship
13.	I Year II Semester	Good Laboratory Practices	Skill development
14.	II Year I Semester	Biostatistics and Design of Experiments	Skill development
15.	II Year I Semester	Data Structures	Employability
16.	II Year I Semester	Cell and Molecular Biology	Skill development
17.	II Year I Semester	Biochemistry and Enzymology	Skill development
18.	II Year I Semester	Microbiology and Fermentation Technology	Entrepreneurship

19.	II Year I Semester	Chemical Engineering Principles in Biotechnology	Skill development
20.	II Year II Semester	Coding Competency (Advanced)	Employability
21.	II Year II Semester	Professional Communication	Employability
22.	II Year II Semester	Bioanalytical Techniques	Skill development
23.	II Year II Semester	Industrial Biotechnology	Skill development
24.	II Year II Semester	Environmental Studies	Skill development
25.	II Year II Semester	Management Science	Employability
26.	III Year I Semester	Soft Skills Lab	Employability
27.	III Year I Semester	Bioprocess Engineering	Skill development
28.	III Year I Semester	Genetic Engineering	Skill development
29.	III Year I Semester	Heat and Mass Transfer	Skill development
30.	III Year II Semester	Quantitative aptitude & Logical reasoning	Employability
31.	III Year II Semester	Bioreaction Engineering	Skill development
32.	III Year II Semester	Bioinformatics	Skill development
33.	IV Year I Semester	Down Stream Processing	Skill development
34.	Department Elective Course	Immunology and Immunoinformatics	Employability
35.	Department Elective Course	Genomics and Proteomics	Employability
36.	Department Elective Course	Solid Waste Management	Employability
37.	Department Elective Course	Instrumentation and Process Control	Employability
38.	Department Elective Course	Metabolic Engineering	Employability
39.	Department Elective Course	Vaccinology	Employability

40.	Department Elective Course	Phage Display	Employability
41.	Department Elective Course	Plant Tissue Culture and Transgenics	Employability
42.	Department Elective Course	Biodiversity and Ecology	Employability
43.	Department Elective Course	Phytopharma	Employability
44.	Department Elective Course	Biopharmaceutical Technology	Employability
45.	Department Elective Course	Plant Taxonomy, Computer Applications and DNA Barcoding	Employability
46.	Department Elective Course	Bioenergetics	Employability
47.	Department Elective Course	3D Bioprinting	Employability
48.	Department Elective Course	Bioethics and Intellectual Property Rights	Employability
49.	Department Elective Course	Genetics	Employability
50.	Department Elective Course	Algorithms in Bioinformatics	Employability
51.	Department Elective Course	Nanobiotechnology	Employability
52.	Department Elective Course	Python Programming for Biotechnologists	Employability
53.	Department Elective Course	Molecular Interactions	Employability
54.	Department Elective Course	Computer Aided Drug Design	Employability
55.	Department Elective Course	Molecular Phylogenetics	Employability

56.	Department Elective Course	Systems Biology	Employability
57.	Department Elective Course	Biosensors	Employability
58.	Department Elective Course	Plant Metabolism	Employability
59.	Department Elective Course	Regulatory affairs and clinical trails	Employability
60.	Department Elective Course	Methods and Practice of Animal and Human Cell Culture	Employability
61.	Department Elective Course	Handling of Animals for Experiments	Employability
62.	Department Elective Course	Cancer Biology and Therapy	Employability
63.	Department Elective Course	Health Economics	Employability
64.	Department Elective Course	Health Informatics	Employability
65.	Minor Course	Molecular diagnostics	Employability
66.	Minor Course	Community Medicine and Public Health	Employability
67.	Minor Course	Vaccine Preventable Diseases	Employability
68.	Minor Course	Medicinal Plants and Ethnobotany	Employability
69.	Minor Course	Project / Vector Borne Diseases	Employability
70.	Honour course	Probiotics and Functional Foods	Employability
71.	Honour course	Food Biotechnology	Employability
72.	Honour course	Metagenomics	Employability
73.	Honour course	Next Generation Sequencing	Employability

74.	Open elective course	Biology for Engineers	Skill development
75.	Open elective course	Bioplastics and Bio-composites	Employability
76.	Open elective course	Computational Biology	Employability
77.	Open elective course	Biosensors	Employability

Chairperson

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APPENDIX III

List of New Courses in the R22 Curriculum

S. No.	Year and Semester	Course Title	Employability / Entrepreneurship / Skill development
1.	I Year I Semester	Elementary Mathematics	Skill development
2.	I Year I Semester	Applied Physics	Skill development
3.	I Year I Semester	Basics of Electrical & Electronics Engineering	Skill development
4.	I Year I Semester	IT Workshop & Bioproducts	Skill development
5.	I Year I Semester	Programming in C	Employability
6.	I Year I Semester	English Proficiency & Communication Skills	Skill development
7.	I Year I Semester	Constitution of India	Skill development
8.	I Year II Semester	Matrices and Differential Equations	Skill development
9.	I Year II Semester	Organic Chemistry	Skill development
10.	I Year II Semester	Coding Competency (Basic)	Employability
11.	I Year II Semester	Engineering Graphics	Skill development
12.	I Year II Semester	Technical English Communication	Entrepreneurship
13.	I Year II Semester	Good Laboratory Practices	Skill development
14.	II Year I Semester	Biostatistics and Design of Experiments	Skill development
15.	II Year I Semester	Data Structures	Employability
16.	II Year I Semester	Cell and Molecular Biology	Skill development
17.	II Year I Semester	Biochemistry and Enzymology	Skill development
18.	II Year I Semester	Microbiology and Fermentation Technology	Entrepreneurship
19.	II Year I Semester	Chemical Engineering Principles in Biotechnology	Skill development
20.	II Year II Semester	Coding Competency (Advanced)	Employability

21.	II Year II Semester	Professional Communication	Employability
22.	II Year II Semester	Bioanalytical Techniques	Skill development
23.	II Year II Semester	Industrial Biotechnology	Skill development
24.	II Year II Semester	Environmental Studies	Skill development
25.	II Year II Semester	Management Science	Employability
26.	III Year I Semester	Soft Skills Lab	Employability
27.	III Year I Semester	Bioprocess Engineering	Skill development
28.	III Year I Semester	Genetic Engineering	Skill development
29.	III Year I Semester	Heat and Mass Transfer	Skill development
30.	III Year II Semester	Quantitative aptitude & Logical reasoning	Employability
31.	III Year II Semester	Bioreaction Engineering	Skill development
32.	III Year II Semester	Bioinformatics	Skill development
33.	IV Year I Semester	Down Stream Processing	Skill development
34.	Department Elective Course	Immunology and Immunoinformatics	Employability
35.	Department Elective Course	Genomics and Proteomics	Employability
36.	Department Elective Course	Solid Waste Management	Employability
37.	Department Elective Course	Instrumentation and Process Control	Employability
38.	Department Elective Course	Metabolic Engineering	Employability
39.	Department Elective Course	Vaccinology	Employability
40.	Department Elective Course	Phage Display	Employability
41.	Department Elective Course	Plant Tissue Culture and Transgenics	Employability
42.	Department Elective Course	Biodiversity and Ecology	Employability
43.	Department Elective Course	Phytopharma	Employability

44.	Department Elective Course	Biopharmaceutical Technology	Employability
45.	Department Elective Course	Plant Taxonomy, Computer Applications and DNA Barcoding	Employability
46.	Department Elective Course	Bioenergetics	Employability
47.	Department Elective Course	3D Bioprinting	Employability
48.	Department Elective Course	Bioethics and Intellectual Property Rights	Employability
49.	Department Elective Course	Genetics	Employability
50.	Department Elective Course	Algorithms in Bioinformatics	Employability
51.	Department Elective Course	Nanobiotechnology	Employability
52.	Department Elective Course	Python Programming for Biotechnologists	Employability
53.	Department Elective Course	Molecular Interactions	Employability
54.	Department Elective Course	Computer Aided Drug Design	Employability
55.	Department Elective Course	Molecular Phylogenetics	Employability
56.	Department Elective Course	Systems Biology	Employability
57.	Department Elective Course	Biosensors	Employability
58.	Department Elective Course	Plant Metabolism	Employability
59.	Department Elective Course	Regulatory affairs and clinical trails	Employability
60.	Department Elective Course	Methods and Practice of Animal and Human Cell Culture	Employability
61.	Department Elective Course	Handling of Animals for Experiments	Employability

62.	Department Elective Course	Cancer Biology and Therapy	Employability
63.	Department Elective Course	Health Economics	Employability
64.	Department Elective Course	Health Informatics	Employability
65.	Minor Course	Molecular diagnostics	Employability
66.	Minor Course	Community Medicine and Public Health	Employability
67.	Minor Course	Vaccine Preventable Diseases	Employability
68.	Minor Course	Medicinal Plants and Ethnobotany	Employability
69.	Minor Course	Project / Vector Borne Diseases	Employability
70.	Honour course	Probiotics and Functional Foods	Employability
71.	Honour course	Food Biotechnology	Employability
72.	Honour course	Metagenomics	Employability
73.	Honour course	Next Generation Sequencing	Employability
74.	Open elective course	Biology for Engineers	Skill development
75.	Open elective course	Bioplastics and Bio-composites	Employability
76.	Open elective course	Computational Biology	Employability
77.	Open elective course	Biosensors	Employability

Chairperson

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