

**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be University)

-Estd. u/s 3 of UGC Act 1956

DEPARTMENT OF BIOTECHNOLOGY**Minutes of CDMC Meeting**

05-07-2020

The members of Curriculum Design and Monitoring Committee for B.Tech. Bioinformatics programme met on 05-07-2020 at ASF04, 'U' block, of VFSTR. The following members attended the meeting

S.No.	Member	Designation	Signature
1	Dr.S.Krupanidhi Professor & Head	Chairman	
2	Dr.D.John Babu	Member	
3	Dr.Abhinav Parasher	Member	
4	Dr. N.Jalaja	Member	

Agenda of the meeting

1. Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2019-20
2. Any point with the permission of Chair.

The following are the important points of analysis obtained from various stakeholders:

1. Emphasis has to be given on programming courses to gain more understanding programming skills.
2. Introduce courses that have intersection between Bioinformatics and Biotechnology.
3. Reduce the core biology/ biotech-oriented syllabi and they may be replaced with other bioinformatics related subjects.

4. It is essential to add the subject Enzyme technology for BI students for better understanding of biological systems and metabolic pathways.
5. It is better to provide option for students learning their choice of interested courses through online e-learning digital platforms.
6. More insights related to the subject structural bioinformatics was given for better understanding of biological processes and drug development for diseases.
7. It is better to add the immunology experiments in the subject immunology and Immunoinformatics to get hands on training related wet lab.
8. To improve the programming skills of students, the courses like Computer Programming, Object Oriented Programming and Unix Programming are essential in bioinformatics domain.
9. Activities related to life skills and employability have to be included in the curriculum
10. The curriculum must be suitable for attempting national competitive examinations and industry needs

Detailed feedback analysis report is enclosed as Annexure-I

The outcomes of the meeting will be placed before the BoS for further discussion and recommendations.


Chairman, CDMC



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Annexure I

Feedback has been received from students on the following nine parameters:

- Q1. The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes.
- Q2. The Bioinformatics Course Contents are designed to enrich laboratory Skills and Core competencies.
- Q3. The Courses placed in the Bioinformatics curriculum serve the needs of both advanced and slow learners.
- Q4. Contact Hour Distribution among the various Course Components (LTP) is Satisfiable.
- Q5. The Electives offered will enrich the passion to learn new technologies in emerging areas.
- Q6. The Curriculum provides an opportunity towards Self learning to realize the expectations.
- Q7. The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is a right mix and satisfiable.
- Q8. Number of Laboratory sessions Integrated with Theory Courses in Bioinformatics have been sufficient to improve the technical skills.
- Q9. Integration of Minor Project with Theory Courses offered in Bioinformatics have enhanced the technical competency and leadership skills in the management of biotech related firms.

The categorization of rating is as follows: Strongly Agree (5), Agree (4), Moderate (3), Disagree (2) and Strongly Disagree (1).

Feedback Analysis is carried based on Average Satisfaction Rating. Rating categorization is carried based on Excellent (≥ 4); Very Good (≥ 3.5 & < 4); Good (≥ 3 & < 3.5); Moderate (> 2 & < 3) and Unsatisfactory (< 2).

Feedback from Students 2019-20 (Academic Year) - UG – B. Tech (BI)

The results derived in terms of percentage of students with common views, average score, and ratings is presented in Table 1.

Table 1: Analysis of feedback from students 2019 – 20

Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	74.3	25.7	0	0	4.743	Excellent
Q2	98	2	0	0	4.98	Excellent
Q3	0	100	0	0	4	Excellent
Q4	72.3	3	1	0	4.003	Excellent
Q5	1	99	0	0	4.01	Excellent
Q6	1	74.3	24.8	0	3.766	Very Good
Q7	72.3	27.7	0	0	4.723	Excellent
Q8	96	3	1	0	4.95	Excellent
Q9	75.2	24.8	0	0	4.752	Excellent

The highest score of 4.98 was given to the parameter namely “The Bioinformatics Course Contents are designed to enrich laboratory Skills and Core competencies” and followed by yet another parameter namely “Number of Laboratory sessions Integrated with Theory Courses in Bioinformatics have been sufficient to improve the technical skills” with a score of 4.95. Both these parameters were rated as Excellent.

It is clearly shown in the Table 5 that the parameters “Integration of Minor Project with Theory Courses offered in Bioinformatics have enhanced the technical competency and leadership skills in the management of biotech related firms”, “The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes” and “The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is a right mix and satisfiable” secured the average score values 4.752, 4.743 and 4.723 respectively and they were all rated as Excellent.

The parameters namely "The Electives offered will enrich the passion to learn new technologies in emerging areas" and yet another parameter namely "Contact Hour Distribution among the various Course Components (LTP) is Satisfiable" have scored 4.01 and 4.003 respectively and they were rated as Excellent.

Average scores of 4.00 and 3.766 were obtained for the parameters namely "The Courses placed in the Bioinformatics curriculum serve the needs of both advanced and slow learners" and "The Curriculum provides an opportunity towards Self learning to realize the expectations" were rated Excellent and Very Good respectively.

Time to time meetings were conducted at the department level to leverage new and advanced techniques to combat the learning difficulties of the students. The feedback analysis reveals that laboratory sessions help to improve the student's technical skills and the courses placed in the curriculum supports both the advanced learners as well as slow learners.

Feedback has been received from the Employer on the following five parameters:

- Q1. The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcome.
- Q2. The relevance of the Course Contents is applicable with the Biotech, Biologics, Pharma and Information Technology Industry.
- Q3. The Professional Electives and Open Electives offered to students are in-line with the technology advancements in the Bioinformatics related firms.
- Q4. Applicability of the tools and technologies described in the curriculum will be enough to practice in Industry.
- Q5. Laboratory skills and theoretical concepts acquired by the students through the course contents will enable them to be placed in MNC.

The categorization of rating is as follows: Strongly Agree (5), Agree (4), Moderate (3), Disagree (2) and Strongly Disagree (1).

Feedback Analysis is carried based on Average Satisfaction Rating. Rating categorization is carried based on Excellent (≥ 4); Very Good (≥ 3.5 & < 4); Good (≥ 3 & < 3.5); Moderate (> 2 & < 3) and Unsatisfactory (< 2)

Feedback from employer 2019 - 20 (Second batch of pass outs) - UG – B. Tech (BI)

The results derived in terms of percentage of students with common views, average score, and ratings are presented in Table 2.

Table 2: Analysis of feedback from students 2019 – 20

Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Avg Rating	Grade
Q1	0	95	0	5	0	3.9	Very Good
Q2	85	10	5	0	0	4.8	Excellent
Q3	25	70	5	0	0	4.2	Excellent
Q4	70	30	0	0	0	4.7	Excellent
Q5	95	5	0	0	0	4.95	Excellent

The highest score of 5 was given to the parameter namely “Laboratory skills and theoretical concepts acquired by the students through the course contents will enable them to be placed in MNC” followed by 4.7 was given to the parameters namely “The relevance of the Course Contents is applicable with the Biotech, Biologics, Pharma and Information Technology Industry” and “Applicability of the tools and technologies described in the curriculum will be enough to practice in Industry” both of which were rated as Excellent.

It is clearly visible from the table that the parameters “The Professional Electives and Open Electives offered to students are in-line with the technology advancements in the Bioinformatics related firms” with a score of 4.2 had been rated Excellent. The parameter “The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes” obtained average scores of 3.9 had been rated as Very Good.

Time to time meetings were conducted to take the corrective measures in order to ensure that the course contents of Bioinformatics Curriculum remain in tune with the Program Outcomes. The feedback analysis reveals that laboratory sessions and theoretical knowledge help to improve student’s technical skills and thereby ensuring that they were placed in jobs which in turn had led to the employer satisfaction.

Feedback has been received from the Faculty on the following nine parameters:

Q1. The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes

Q2. The Course Contents along with the laboratory skills will enhance Informatics and Core competencies.

Q3. The allocation of Credits to the respective Courses is satisfiable.

Q4. The Contact Hour Distribution among the various Course Components (LTP) is Satisfiable

Q5. Electives will enable the passion to learn new technologies in emerging areas of Bioinformatics

Q6. The Curriculum provides an opportunity towards Self learning to realize the expectations.

Q7. The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is satisfiable?

Q8. The number of theoretical courses amalgamated with laboratory sessions is sufficient to improve the technical skills of students.

Q9. The integration of Minor Project with Theory Courses will improve the technical competency and leadership skills among the students.

The categorization of rating is as follows: Strongly Agree (5), Agree (4), Moderate (3), Disagree (2) and Strongly Disagree (1).

Feedback Analysis is carried based on Average Satisfaction Rating. Rating categorization is carried based on Excellent (≥ 4); Very Good (≥ 3.5 & < 4); Good (≥ 3 & < 3.5); Moderate (> 2 & < 3) and Unsatisfactory (< 2).

Feedback from Faculty of the academic year 2019 - 20- UG – B. Tech (BI)

The results derived in terms of percentage of students with consensus views, average score, and ratings are presented in Table 3.

Table 3: Analysis of feedback from Faculty 2019 – 20

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	56.8	37.8	5.4	0	0	4.514	Excellent
Q2	56.8	40.5	0	2.7	0	4.514	Excellent
Q3	64.9	35.1	0	0	0	4.649	Excellent
Q4	64.9	27	8.1	0	0	4.568	Excellent
Q5	59.5	40.5	0	0	0	4.595	Excellent
Q6	56.8	37.8	2.7	2.7	0	4.487	Excellent
Q7	70.3	27	2.7	0	0	4.676	Excellent
Q8	62.2	32.4	5.4	0	0	4.568	Excellent
Q9	70.3	24.3	2.7	2.7	0	4.622	Excellent

The highest score of 4.676 was given to the following parameter namely “The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is satisfiable?” was rated as Excellent. It is clearly visible from Table 5 that the following parameters namely “The allocation of Credits to the respective Courses is satisfiable” obtained average scores of 4.649, which had been rated as Excellent. A score of 4.622 was given to the following parameter namely “The integration of Minor Project with Theory Courses will improve the technical competency and leadership skills among the students” was rated as Excellent. A score of 4.595 was given to the parameter namely “Electives will enable the passion to learn new technologies in emerging areas of Bioinformatics”, was also rated as Excellent.

A score of 4.568 were given to the parameters namely “The Contact Hour Distribution among the various Course Components (LTP) is Satisfiable”, and “The number of theoretical courses amalgamated with laboratory sessions is sufficient to improve the technical skills of students” all of which were rated as Excellent. A score of 4.514 were given to the parameters namely “The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes”, and “The Course Contents along with the laboratory skills will enhance Informatics and Core competencies” both of which were rated as Excellent. A score of 4.487 was given to the following parameter namely “The Curriculum provides an opportunity towards Self learning to realize the expectations” was rated as Excellent.

Feedback has been received from the Alumni on the following seven parameters:

- Q1. The Curriculum laid a good foundation in understanding the basic engineering concepts in Bioinformatics.
- Q2. The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes.
- Q3. The Bioinformatics Curriculum encompasses all the required Job Oriented Skills.
- Q4. Professional and Open Electives of Curriculum serve the technical advancements needed in the Biotech, Biologics, Pharma and Information Technology industry.
- Q5. The Tools and Technologies learnt during laboratory sessions will enrich the repository and retrieval of gene and satellite DNA information for the purpose of paternity testing and forensic investigations.
- Q6. While comparing with your peers from other Universities, our curriculum provided technical skills.
- Q7. Current Curriculum is superior than your studied Curriculum.

The categorization of rating is as follows: Strongly Agree (5), Agree (4), Moderate (3), Disagree (2) and Strongly Disagree (1).

Feedback Analysis is carried based on Average Satisfaction Rating. Rating categorization is carried based on Excellent (≥ 4); Very Good (≥ 3.5 & < 4); Good (≥ 3 & < 3.5); Moderate (> 2 & < 3) and Unsatisfactory (< 2)

Feedback from Alumni of 2019 - 20 (Second batch of pass outs) - UG – B. Tech (BI)

The results derived in terms of percentage of students with common views, average score, and ratings are presented in Table 4.

Table 4: Analysis of feedback from Alumni 2019 – 20

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	90	10	0	0	0	4.9	Excellent
Q2	70	30	0	0	0	4.7	Excellent
Q3	60	40	0	0	0	4.6	Excellent
Q4	60	40	0	0	0	4.6	Excellent
Q5	80	20	0	0	0	4.8	Excellent
Q6	90	10	0	0	0	4.9	Excellent
Q7	70	30	0	0	0	4.7	Excellent

The highest score of 4.9 were given to the parameters namely “The Curriculum laid a good foundation in understanding the basic engineering concepts in Bioinformatics” and “While comparing with your peers from other Universities, our curriculum provided technical skills”, which were rated as ‘Excellent’.

This is followed by a score of 4.8, given to the parameter namely “The Tools and Technologies learnt during laboratory sessions will enrich the repository and retrieval of gene and satellite DNA information for the purpose of paternity testing and forensic investigations” which was rated as ‘Excellent’.

It is clearly visible from the table that the two parameters namely “The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes” and “Current Curriculum is superior to your studied Curriculum” are with an equal score of 4.7, which had been rated as ‘Excellent’.

The two parameters such as “The Bioinformatics Curriculum encompasses all the required Job Oriented Skills” and “Professional and Open Electives of Curriculum serve the technical advancements needed in the Biotech, Biologics, Pharma and Information Technology industry” obtained average scores of 4.6 and had been rated as Excellent.

Time to time meetings were conducted to take the corrective measures in order to ensure that the course contents of Bioinformatics Curriculum remain in tune with the Program Outcomes and also to ensure that the curriculum would impart necessary job-oriented skills.

The feedback analysis reveals that the alumni had greater satisfaction towards the curriculum, which was quite evident from the scores obtained for the parameters Q1 and Q6.

Feedback has been received from the parents on the following five parameters:

- Q1. The theoretical courses and practical sessions offered in our Bioinformatics curriculum are satisfiable
- Q2. The overall assessment of technical knowledge in Bioinformatics disciplines acquired by your ward who is pursuing his/her program in our institution is satisfiable.
- Q3. The Academic and Emotional Progression of your ward are satisfying as per your expectations.

Q4. Competency of your ward in Bioinformatics is on par with the students from other Universities/Institutes.

Q5. Course Contents of our Bioinformatics Curriculum are in tune with the Industry demand.

The categorization of rating is as follows: Strongly Agree (5), Agree (4), Moderate (3), Disagree (2) and Strongly Disagree (1).

Feedback Analysis is carried based on Average Satisfaction Rating. Rating categorization is carried based on Excellent (≥ 4); Very Good (≥ 3.5 & < 4); Good (≥ 3 & < 3.5); Moderate (> 2 & < 3) and Unsatisfactory (< 2)

Feedback from Parents of the academic year 2019-20 - UG – B. Tech (BI)

The results derived in terms of percentage of students with consensus views, average score, and ratings are presented in Table 5.

Table 5: Analysis of feedback from Parents 2019 – 20

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	100	0	0	0	0	5	Excellent
Q2	100	0	0	0	0	5	Excellent
Q3	16.7	83.3	0	0	0	4.167	Excellent
Q4	97.2	2.8	0	0	0	4.972	Excellent
Q5	100	0	0	0	0	5	Excellent

The highest score of 5.00 was given to the following parameters namely “The theoretical courses and practical sessions offered in our Bioinformatics curriculum are satisfiable”, “The overall assessment of technical knowledge in Bioinformatics disciplines acquired by your ward that is pursuing his/her program in our institution is satisfiable” and “Course Contents of our Bioinformatics Curriculum are in tune with the Industry demand” all of which were rated as Excellent.

It is clearly visible from the Table I that the parameter “Competency of your ward in Bioinformatics is on par with the students from other Universities/Institutes” obtained average scores of 4.972 has been rated as Excellent.

The parameter namely "The Academic and Emotional Progression of your ward are satisfying as per your expectations" had shown the score of 4.167 which clearly reflects the satisfaction of the parent towards the development of academic and emotional aspects of their wards. This also has been rates as Excellent.


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