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

15-03-2019

The members of Curriculum Design and Monitoring Committee for B.Tech. Bioinformatics programme met on 15-03-2019 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 2018-19
2. Any point with the permission of Chair.

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

1. The Chairman-CDMC briefed the draft curriculum of R-19 B.Tech Bioinformatics to the members
2. Emphasis has to be given on programming courses to gain more understanding programming skills.
3. Maximum number of courses related to computer programming were integrated with laboratory to provide more practice secessions.

4. Knowledge related to drug development will be helpful in Insilco drug design.
5. It is essential to add the subject Enzyme technology for BI students for better understanding of biological systems and metabolic pathways.
6. Theory courses has to be integrated with Laboratories for better understanding of the concept.
7. More insights related to the subject structural bioinformatics was given for better understanding of biological processes and drug development for diseases.
8. It is better to add the immunology experiments in the subject immunology and Immunoinformatics to get hands on training related wet lab.
9. To improve the programming skills of students, the courses like Computer Programming, Object Oriented Programming and Unix Programming are essential in bioinformatics domain.
10. Activities related to life skills and employability have to be included in the curriculum.
11. 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 2018-19 (Academic Year) - UG – B. Tech (BI)

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

Table 1: Analysis of feedback from students 2018 – 19

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	97	3	0	0	0	4.97	Excellent
Q2	98	2	0	0	0	4.98	Excellent
Q3	0	100	0	0	0	4	Excellent
Q4	95	3	1	0	1	4.91	Excellent
Q5	1	99	0	0	0	4.01	Excellent
Q6	1	97	2	0	0	3.99	Very Good
Q7	95	5	0	0	0	4.95	Excellent
Q8	96	3	1	0	0	4.95	Excellent
Q9	98	2	0	0	0	4.98	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 also similar highest score namely 4.98 to yet another parameter namely "The Bioinformatics Course Contents are designed to enrich laboratory Skills and Core competencies" and had been rated as Excellent.

It is clearly visible from the table that the parameters namely "The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes", " The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is a right mix and satisfiable" and "Number of Laboratory sessions Integrated with Theory Courses in Bioinformatics have been sufficient to improve the technical skills" obtained average scores 4.97, 4.95 and 4.95 respectively and they had been rated as Excellent.

The parameter namely "The Curriculum provides an opportunity towards Self learning to realize the expectations" secured a score of 3.99 and rated as Very Good reflecting that it complied with the student expectations.

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 Outcomes

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 Employers 2018-19 (First Batch pass outs) - UG – B. Tech (BI)

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

Table 2: Analysis of feedback from Employers 2018 – 19

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	20	80	0	0	0	4.2	Excellent
Q2	80	20	0	0	0	4.8	Excellent
Q3	60	40	0	0	0	4.6	Excellent
Q4	60	40	0	0	0	4.6	Excellent
Q5	100	0	0	0	0	5	Excellent

The highest score of 5.00 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 the parameter namely "The relevance of the Course Contents is applicable with the Biotech, Biologics, Pharma and Information Technology Industry" with a score of 4.8, both had been rated as Excellent.

It is clearly visible from the Table I that the parameters viz., "The Professional Electives and Open Electives offered to students are in-line with the technology advancements in the Bioinformatics related firms" and "Applicability of the tools and technologies described in the curriculum will be enough to practice in Industry" obtained average scores of 4.6 had been rated as Excellent.

The parameters namely "The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes" had shown the score of 4.2 which clearly reflects the benefit towards the employer expectations.

The feedback analysis reveals that laboratory sessions helped improve the student's technical skills and the courses placed in the curriculum which had ultimately led to a good rating by the employer.

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 2018 - 19- 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 2018 – 19

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	37	40.7	22.2	0	0	4.144	Excellent
Q2	63	33.3	0	3.7	0	4.556	Excellent
Q3	51.9	48.1	0	0	0	4.519	Excellent
Q4	63	25.9	11.1	0	0	4.519	Excellent
Q5	55.6	44.4	0	0	0	4.556	Excellent
Q6	51.9	40.7	3.7	3.7	0	4.408	Excellent
Q7	66.7	29.6	3.7	0	0	4.63	Excellent
Q8	55.6	37	7.4	0	0	4.482	Excellent
Q9	63	29.6	3.7	3.7	0	4.519	Excellent

The highest score of 4.63 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 4 that the following parameters namely "The Course Contents along with the laboratory skills will enhance Informatics and Core competencies." and "Electives will enable the passion to learn new technologies in emerging areas of Bioinformatics" obtained average scores of 4.556, all of which had been rated as Excellent.

A score of 4.519 was given to the following parameters namely "The allocation of Credits to the respective Courses is satisfiable", "The Contact Hour Distribution among the various Course Components (LTP) is Satisfiable" and "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 4.482 was given to the parameter namely "The number of theoretical courses amalgamated with laboratory sessions is sufficient to improve the technical skills of students", was also rated as Excellent. A score of 4.408 was given to the 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 2018-19 (First Batch pass outs) - UG – B. Tech (BI)

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

Table 4: Analysis of feedback from Alumni 2018 – 19

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	66.7	33.3	0	0	0	4.667	Excellent
Q2	88.9	11.1	0	0	0	4.889	Excellent
Q3	44.4	55.6	0	0	0	4.444	Excellent
Q4	88.9	11.1	0	0	0	4.889	Excellent
Q5	55.6	44.4	0	0	0	4.556	Excellent
Q6	77.8	22.2	0	0	0	4.778	Excellent
Q7	100	0	0	0	0	5	Excellent

The highest score of 5.00 was given to the parameter namely "Current Curriculum is superior than your studied Curriculum" followed by the parameters namely "The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes" and "Professional and Open Electives of Curriculum serve the technical advancements needed in the Biotech, Biologics, Pharma and Information Technology industry" and both with an equal score of 4.889 and had been rated as Excellent.

It is clearly visible from the Table I that the parameter "While comparing with your peers from other Universities, our curriculum provided technical skills" obtained average scores of 4.778 has been rated as Excellent.

The parameter namely "The Curriculum laid a good foundation in understanding the basic engineering concepts in Bioinformatics" had shown the score of 4.667 which clearly reflects the fulfilment of the purpose of a technical degree namely B.Tech in Bioinformatics.

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" had shown the score of 4.556 and has been rated as Excellent.

The parameter namely "The Bioinformatics Curriculum encompasses all the required Job Oriented Skills" has shown the score of 4.444 and has been rated as Excellent.

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 2018-19 - 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 2018 – 19

	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	0	100	0	0	0	4	Excellent
Q4	97.7	2.3	0	0	0	4.977	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 4.977 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 which clearly reflects the satisfaction of the parent towards the development of academic and emotional aspects of their wards. This also has been rated as Excellent.

HOD, BT