



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

19-04-2021

The following members of Curriculum Design and Monitoring Committee for B.Tech. Bioinformatics programme met on 19-04-2021 at ASF04, 'U' block, of VFSTR.

| S.No. | Member | Designation | Signature |
|-------|-------------------------------------|-------------|-----------|
| 1 | Dr.S.Krupanidhi Professor & Head | Chairman | |
| 2 | Dr.D.John Babu | Member | |
| 3 | Dr. M. Indira | Member | |
| 4 | Mr. A. Venkata Narayana | Member | |
| 5 | Dr. N. Jalaja | Member | |

Agenda of the meeting

1. Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty and Students during the academic year 2020-21
2. Any point with the permission of the 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 in the emerging area like machine learning applications in bioinformatics.
3. Need of floating courses of industrial applications
4. Digital learning has to be strengthened by giving more weightage in curriculum.
5. Phylogeny studies are essential for bioinformatics students, hence need to float a course on phylogeny studies.
6. Inputs on vaccine development has to be included in the next revisions.
7. Activities related to life skills and employability skills have to be further enhanced.
8. 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 1

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 2020-21 (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 2020 – 21

| | Strongly Agree | Agree | Moderate | Disagree | Strongly Disagree | Avg. Rating | Grade |
|-----------|----------------|-------|----------|----------|-------------------|-------------|-----------|
| Q1 | 94.2 | 3.8 | 0 | 1 | 1 | 4.892 | Excellent |
| Q2 | 95.2 | 2.9 | 1 | 1 | 0 | 4.926 | Excellent |
| Q3 | 91.3 | 6.7 | 1.9 | 0 | 0 | 4.89 | Excellent |
| Q4 | 92.3 | 5.8 | 1.9 | 0 | 0 | 4.904 | Excellent |
| Q5 | 93.3 | 5.8 | 0 | 0 | 1 | 4.907 | Excellent |
| Q6 | 91.3 | 5.8 | 2.9 | 0 | 0 | 4.884 | Excellent |
| Q7 | 92.3 | 6.7 | 0 | 0 | 1 | 4.893 | Excellent |
| Q8 | 81.7 | 14.4 | 2.9 | 0 | 1 | 4.758 | Excellent |
| Q9 | 87.5 | 11.5 | 1 | 0 | 0 | 4.865 | Excellent |

The highest score of 4.926 was given to the parameter namely “The Bioinformatics Course Contents are designed to enrich laboratory Skills and Core competencies” and followed by other parameters namely “The Electives offered will enrich the passion to learn new technologies in emerging areas”, “Contact Hour Distribution among the various Course Components (LTP) is Satisfiable” and “The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is a right mix and satisfiable” with a scores of 4.907, 4.904 and 4.893. All these parameters were rated as Excellent.

It is clearly shown in the Table 5 that the parameters “The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes”, “The Courses placed in the Bioinformatics curriculum serve the needs of both advanced and slow learners” and “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” secured the average score values 4.892, 4.89 and 4.865 respectively and they were all rated as Excellent.

The parameters namely “The Curriculum provides an opportunity towards Self learning to realize the expectations” and “Number of Laboratory sessions Integrated with Theory Courses in Bioinformatics have been sufficient to improve the technical skills” have scored 4.719 and 4.821 respectively and they were rated as Excellent. 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 Employer 2020 - 21 - 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 Employer 2020 – 21

| | Strongly Agree | Agree | Moderate | Disagree | Strongly Disagree | Avg. Rating | Grade |
|-----------|-----------------------|--------------|-----------------|-----------------|--------------------------|--------------------|--------------|
| Q1 | 100 | 0 | 0 | 0 | 0 | 5 | Excellent |
| Q2 | 83.3 | 16.7 | 0 | 0 | 0 | 4.833 | Excellent |
| Q3 | 91.7 | 8.3 | 0 | 0 | 0 | 4.917 | Excellent |
| Q4 | 100 | 0 | 0 | 0 | 0 | 5 | Excellent |
| Q5 | 83.3 | 16.7 | 0 | 0 | 0 | 4.833 | Excellent |

The highest score of 5 was given to the parameters namely “The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes” and “Applicability of the tools and technologies described in the curriculum will be enough to practice in Industry” and followed by 4.917 was given to the parameters namely “The Professional Electives and Open Electives offered to students are in-line with the technology advancements in the Bioinformatics related firms” and rated as Excellent.

It is clearly visible from the table that the parameters “The relevance of the Course Contents is applicable with the Biotech, Biologics, Pharma and Information Technology Industry” and “Laboratory skills and theoretical concepts acquired by students through the course contents will enable them to be placed in MNC” also obtained good scores of 4.833 and rated as Excellent.

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 2020 - 21- 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 2020 – 21

| | Strongly Agree | Agree | Moderate | Disagree | Strongly Disagree | Avg. Rating | Grade |
|----|----------------|-------|----------|----------|-------------------|-------------|-----------|
| Q1 | 63.6 | 36.4 | 0 | 0 | 0 | 4.636 | Excellent |
| Q2 | 72.7 | 27.3 | 0 | 0 | 0 | 4.727 | Excellent |
| Q3 | 72.7 | 27.3 | 0 | 0 | 0 | 4.727 | Excellent |
| Q4 | 63.6 | 36.4 | 0 | 0 | 0 | 4.727 | Excellent |
| Q5 | 90.9 | 9.1 | 0 | 0 | 0 | 4.636 | Excellent |
| Q6 | 72.7 | 27.3 | 0 | 0 | 0 | 4.727 | Excellent |
| Q7 | 72.7 | 27.3 | 0 | 0 | 0 | 4.727 | Excellent |
| Q8 | 63.6 | 36.4 | 0 | 0 | 0 | 4.636 | Excellent |
| Q9 | 81.8 | 18.2 | 0 | 0 | 0 | 4.818 | Excellent |

The highest score of 4.909 was given to the following parameter namely “The Curriculum provides an opportunity towards Self learning to realize the expectations” and rated as Excellent. A good score of 4.818 was given to the parameter namely “The integration of Minor Project with Theory Courses will improve the technical competency and leadership skills among the students” and was rated as Excellent. It is clearly visible from Table 3 that the following parameters namely “The Course Contents along with the laboratory skills will enhance Informatics and Core competencies”, “The allocation of Credits to the respective Courses is satisfiable”, “The Contact Hour Distribution among the various Course Components (LTP) is Satisfiable” and “The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is satisfiable?” obtained good score of 4.727, which have been rated as Excellent. A score of 4.636 was given to the following parameter namely “The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes. “Electives will enable the passion to learn new technologies in emerging areas of

Bioinformatics”, “The number of theoretical courses amalgamated with laboratory sessions is sufficient to improve the technical skills of students” was also 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 2020 - 21 - 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 2020 – 21

| | Strongly Agree | Agree | Moderate | Disagree | Strongly Disagree | Avg. Rating | Grade |
|-----------|-----------------------|--------------|-----------------|-----------------|--------------------------|--------------------|--------------|
| Q1 | 80 | 20 | 0 | 0 | 0 | 4.8 | Excellent |
| Q2 | 80 | 20 | 0 | 0 | 0 | 4.8 | Excellent |
| Q3 | 80 | 20 | 0 | 0 | 0 | 4.8 | Excellent |
| Q4 | 80 | 20 | 0 | 0 | 0 | 4.8 | Excellent |
| Q5 | 60 | 40 | 0 | 0 | 0 | 4.6 | Excellent |
| Q6 | 80 | 20 | 0 | 0 | 0 | 4.8 | Excellent |
| Q7 | 80 | 20 | 0 | 0 | 0 | 4.8 | Excellent |

The highest score of 4.8 were given to almost all the parameters namely “The Curriculum laid a good foundation in understanding the basic engineering concepts in Bioinformatics”, “The Course Contents of Bioinformatics Curriculum are in tune with the Program Outcomes”, “The Bioinformatics Curriculum encompasses all the required Job Oriented Skills”, “Professional and Open Electives of Curriculum serve the technical advancements needed in the Biotech, Biologics, Pharma and Information Technology industry”, “While comparing with your peers from other Universities, our curriculum provided technical skills” and “Current Curriculum is superior than your studied Curriculum” and were rated as ‘Excellent’.

The parameter named “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” was also obtained good score 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.