



## DEPARTMENT OF BIOTECHNOLOGY

### Minutes of CDMC Meeting

10-04-2017

The members of Curriculum Design and Monitoring Committee for B.Tech. Biotechnology programme met on 10-04-2017 at ASF04, 'U' block, of Vignan's University. The following members attended the meeting

S.No.	Member	Designation	Signature
1	Dr.D. Vijaya Ramu Associate professor & Head	Chairman	
2	Mr.D.John Babu	Member	
3	Mrs. 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, Parents and Students during the academic year 2016-17
2. Any point with the permission of Chair.

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

1. Include hands on training on fermenter for better understanding of Bioprocess parameters control.
2. For better understanding of Genomics & Proteomics, experimental knowledge essential.
3. Encouragement towards extracurricular activities is needed.

4. Courses on manufacturing of Bioproducts need to be introduced.
5. Introduce project-based learning to improve technical skills of the students.
6. Conduct value added courses during the semester break time to get exposure towards industry-related technologies.
7. Include reactor design concepts in Biochemical Reaction Engineering course
8. It is better to include industrially important enzymes in the subject Industrial Biotechnology.
9. It is better to have the courses like Tissue engineering to acquaint with the current aspects related to the field of Biotechnology and regenerative medicine.
10. It is advisable to include more professional electives to get expertise in the particular field.

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**



**VIGNAN'S**  
Foundation for Science, Technology & Research  
**UNIVERSITY**  
(Estd. u/s 3 of UGC Act of 1956)

## DEPARTMENT OF BIOTECHNOLOGY

### Annexure I

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

- Q1. The Course Contents of Biotechnology Curriculum are in tune with the Program Outcomes.
- Q2. The Biotechnology Course Contents are designed to enrich laboratory Skills and Core competencies.
- Q3. The Courses placed in the Biotechnology 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 Biotechnology have been sufficient to improve the technical skills.
- Q9. Integration of Minor Project with Theory Courses offered in Biotechnology 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 ( $\geq 4$ ); Very Good ( $\geq 3.5$  &  $< 4$ ); Good ( $\geq 3$  &  $< 3.5$ ); Moderate ( $> 2$  &  $< 3$ ) and Unsatisfactory ( $< 2$ )

### **Feedback from Students 2016-17 (Academic Year) - UG – B. Tech (BT)**

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



**Table 1: Analysis of feedback from students 2016 – 17**

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	71	23.3	5.2	0.2	0.2	4.644	Excellent
Q2	83.3	13.3	2.5	0	1	4.782	Excellent
Q3	24.1	62.7	11.8	1.5	0	4.097	Excellent
Q4	54.5	29.2	15	0.7	0.5	4.362	Excellent
Q5	26	62.9	8.1	2.2	0.7	4.11	Excellent
Q6	14.5	66.8	17	1.5	0.2	3.939	Very Good
Q7	55.3	34.6	9.3	0.5	0.2	4.44	Excellent
Q8	53.1	36.9	9.6	0	0.5	4.424	Excellent
Q9	57	32.9	8.8	1	0.2	4.452	Excellent

The highest score of 4.644 was given to the parameter namely “Course Contents of Curriculum are in tune with the Program Outcomes” followed by the parameter namely “The Biotechnology Course Contents are designed to enrich laboratory Skills and Core competencies” with a score of 4.782 and both had been rated as Excellent.

It is clearly visible from the Table 1 that the parameters viz., “Integration of Minor Project with Theory Courses offered in Biotechnology have enhanced the technical competency and leadership skills in the management of biotech related firms” and “Number of Laboratory sessions Integrated with Theory Courses in Biotechnology have been sufficient to improve the technical skills” obtained average scores 4.452 and 4.424 respectively and had been rated as Excellent.

The parameters namely “The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is a right mix and satisfiable” and “Contact Hour Distribution among the various Course Components (LTP) is Satisfiable” shown the scores of 4.44 and 4.362 respectively and had been rated as Excellent, which clearly reflects the benefit towards the student expectations.

Average scores of 3.393, 4.11 and 4.097 were obtained for the parameters namely “The Curriculum provides an opportunity towards Self learning to realize the expectations”, “The Electives offered will enrich the passion to learn new technologies in emerging areas” and “The Courses placed in

the Biotechnology curriculum serve the needs of both advanced and slow learners” respectively. These three parameters were rated as Excellent and Very good.

Time to time meetings were conducted at the department level to leverage new and advanced techniques to combat the learning difficulties of 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 Biotechnology Curriculum are in tune with the Program Outcomes
- Q2. The relevance of the Course Contents is applicable with the Biotech, Biologics and Pharma Industry.
- Q3. The Professional Electives and Open Electives offered to students are in-line with the technology advancements in the biotech 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 ( $\geq 4$ ); Very Good ( $\geq 3.5$  &  $< 4$ ); Good ( $\geq 3$  &  $< 3.5$ ); Moderate ( $> 2$  &  $< 3$ ) and Unsatisfactory ( $< 2$ )

#### Feedback from Employer 2016-17 (Academic Year) - UG – B. Tech (BT)

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

**Table 2: Analysis of feedback from employer 2016 – 17**

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	30	70	0	0	0	4.3	Excellent
Q2	20	50	30	0	0	3.9	Very Good
Q3	40	50	10	0	0	4.3	Excellent
Q4	20	80	0	0	0	4.2	Excellent
Q5	60	30	0	10	0	4.4	Excellent

The highest score of 4.4 and 4.3 was given to the parameters namely “Laboratory skills and theoretical concepts acquired by the students through the course contents will enable them to be placed in MNC” and “The Professional Electives and Open Electives offered to students are in-line with the technology advancements in the biotech related firms.” and both had been rated as Excellent and Very Good respectively.

The parameter “The Professional Electives and Open Electives offered to students are in-line with the technology advancements in the biotech related firms” obtained average score of 4.3 and rated as Moderate.

The parameters namely “The Course Contents of Biotechnology Curriculum are in tune with the Program Outcomes” and “The relevance of the Course Contents is applicable with the Biotech, Biologics and Pharma Industry” obtained average scores of 4.3 and 3.9 and rated as Moderate and Good respectively.

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

- Q1. The Course Contents of Biotechnology Curriculum are in tune with the Program Outcomes.
- Q2. The Course Contents along with the laboratory skills will enhance biomedical 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 Biotechnology.
- 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 Genetic Engineering and Bioprocess 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 ( $\geq 4$ ); Very Good ( $\geq 3.5$  &  $< 4$ ); Good ( $\geq 3$  &  $< 3.5$ ); Moderate ( $> 2$  &  $< 3$ ) and Unsatisfactory ( $< 2$ )

#### Feedback from Faculty 2016-17 (Academic Year) - UG – B. Tech (BT)

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

**Table 3: Analysis of feedback from faculty 2016 – 17**

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	42.9	57.1	0	0	0	4.429	Excellent
Q2	42.9	57.1	0	0	0	4.429	Excellent
Q3	71.4	28.6	0	0	0	4.714	Excellent
Q4	71.4	28.6	0	0	0	4.714	Excellent
Q5	57.1	42.9	0	0	0	4.571	Excellent
Q6	42.9	57.1	0	0	0	4.429	Excellent
Q7	71.4	28.6	0	0	0	4.714	Excellent
Q8	71.4	28.6	0	0	0	4.714	Excellent
Q9	71.4	28.6	0	0	0	4.714	Excellent

The highest score of 4.714 was given to the parameters namely “The allocation of Credits to the respective Courses is satisfiable”, “The Contact Hour Distribution among the various Course Components (LTP) is Satisfiable”, “The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is satisfiable”, “The number of theoretical courses amalgamated with laboratory sessions is sufficient to improve the Genetic Engineering and Bioprocess technical skills of students”, and “The integration of Minor Project with Theory Courses will improve the technical competency and leadership skills among the students” and all had been rated as Excellent.

The parameters “Electives will enable the passion to learn new technologies in emerging areas of Biotechnology”, “The Course Contents of Biotechnology Curriculum are in tune with the Program Outcomes”, “The Course Contents along with the laboratory skills will enhance biomedical and Core competencies”, and “The Curriculum provides an opportunity towards Self learning to realize the expectations” obtained average score of 4.714 and all are 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 Biotechnology.
- Q2. The Course Contents of Biotechnology Curriculum are in tune with the Program Outcomes.
- Q3. The Biotechnology Curriculum encompasses all the required Job Oriented Skills.
- Q4. Professional and Open Electives of Curriculum serve the technical advancements needed in the Biotech, Biologics and Pharma industry.
- Q5. The Tools and Technologies learnt during laboratory sessions will enrich the quality Control and quality assurance in Biotechnology industry.
- 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 ( $\geq 4$ ); Very Good ( $\geq 3.5$  &  $< 4$ ); Good ( $\geq 3$  &  $< 3.5$ ); Moderate ( $> 2$  &  $< 3$ ) and Unsatisfactory ( $< 2$ )

#### **Feedback from Alumni 2016-17 (Academic Year) - UG – B. Tech (BT)**

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



**Table 4: Analysis of feedback from alumni 2016 – 17**

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Moderate</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Avg. Rating</b>	<b>Grade</b>
<b>Q1</b>	34.8	47.8	4.3	13	0	4.041	Excellent
<b>Q2</b>	47.8	21.7	26.1	4.3	0	4.127	Excellent
<b>Q3</b>	21.7	17.4	21.7	17.4	21.7	2.997	Moderate
<b>Q4</b>	30.4	21.7	26.1	8.7	13	3.475	Good
<b>Q5</b>	26.1	21.7	8.7	21.7	21.7	3.085	Good
<b>Q6</b>	39.1	21.7	17.4	4.3	17.4	3.605	Very Good
<b>Q7</b>	56.5	21.7	4.3	4.3	13	4.038	Excellent

The highest score of 4.038 was given to the parameter namely “Current Curriculum is superior than your studied Curriculum” and rated as Excellent. The two parameters namely “The Course Contents of Biotechnology Curriculum are in tune with the Program Outcomes” and “The Curriculum laid a good foundation in understanding the basic engineering concepts in Biotechnology” obtained an average score of 4.127 and 4.041 respectively and rated as Excellent.

The parameters “While comparing with your peers from other Universities, our curriculum provided technical skills”, “Professional and Open Electives of Curriculum serve the technical advancements needed in the Biotech, Biologics and Pharma industry”, and “The Tools and Technologies learnt during laboratory sessions will enrich the quality control and quality assurance in Biotechnology industry” obtained an average score of 3.605, 3.475, and 3.085 respectively and rated as Very good and good. The lowest score was obtained for “The Biotechnology Curriculum encompasses all the required Job Oriented Skills” with a score of 2.997 and rated as Moderate.

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

- Q1. The theoretical courses and practical sessions offered in our Biotechnology curriculum are satisfiable.
- Q2. The overall assessment of technical knowledge in Biotechnology 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 Biotechnology is on par with the students from other Universities/Institutes.

Q5. Course Contents of our Biotechnology 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 ( $\geq 4$ ); Very Good ( $\geq 3.5$  &  $< 4$ ); Good ( $\geq 3$  &  $< 3.5$ ); Moderate ( $> 2$  &  $< 3$ ) and Unsatisfactory ( $< 2$ )

#### **Feedback from Parents 2016-17 (Academic Year) - UG – B. Tech (BT)**

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

**Table 5: Analysis of feedback from parents 2016 – 17**

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Moderate</b>	<b>Disagree</b>	<b>Strongly Disagree</b>	<b>Avg. Rating</b>	<b>Grade</b>
<b>Q1</b>	93.9	3	3	0	0	4.905	Excellent
<b>Q2</b>	80.3	18.2	1.5	0	0	4.788	Excellent
<b>Q3</b>	27.3	69.7	1.5	0	1.5	4.213	Excellent
<b>Q4</b>	81.8	13.6	3	0	1.5	4.739	Excellent
<b>Q5</b>	77.3	16.7	4.5	0	1.5	4.683	Excellent

The highest score of 4.905 was given to the parameter namely “The theoretical courses and practical sessions offered in our Biotechnology curriculum are satisfiable” and rated as Excellent.

The parameters “The overall assessment of technical knowledge in Biotechnology disciplines acquired by your ward who is pursuing his/her program in our institution is satisfiable” and “Competency of your ward in Biotechnology is on par with the students from other

Universities/Institutes" obtained average scores of 4.5788 and 4.739 respectively and rated as Excellent.

The parameter "Course Contents of our Biotechnology Curriculum are in tune with the Industry demand" obtained average score of 4.683 and rated as Excellent. The parameters namely "The Academic and Emotional Progression of your ward are satisfying as per your expectations" obtained average score of 4.213 and rated as Excellent.

The feedback analysis reveals that need of increase of departmental professional electives, increase in laboratory sessions and introduction of small-projects in core courses.

A handwritten signature in black ink, appearing to read "A. V. L. A. Ramu". The signature is written in a cursive style with a horizontal line extending from the end.

**HOD, BT**