



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

## DEPARTMENT OF BIOTECHNOLOGY

### Minutes of CDMC Meeting

16-03-2016

The members of Curriculum Design and Monitoring Committee for B.Tech. Biotechnology programme met on 16-03-2016 at ASF04, 'U' block, of Vigna's University. The following members attended the meeting

S.No.	Member	Designation	Signature
1	Dr.S. Krupanidhi Professor & Head	Chairman	
2	Mr.D.John Babu	Member	
3	Mrs. M.Indira	Member	
4	Mr. A. Venkata Narayana	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 2015-16.
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-16 B.Tech Biotechnology to the members
2. Add more courses on Plant Biotechnology to get more understanding on extracting medicinal components from plants.
3. Introduce more elective courses in one specific area of students' interest.

4. Connection between theory courses and laboratory is required for better understanding of the concept.
5. Courses on manufacturing of Bioproducts need to be introduced.
6. Include hands on training on fermenter for better understanding of Bioprocess parameters control.
7. The concept of Ramachandran plot in the course Bioinformatics has to be included as it is a very important tool in docking studies.
8. Include reactor design concepts in Biochemical Reaction Engineering course
9. It is better to include industrially important enzymes in the subject Industrial Biotechnology.
10. Add more courses on Plant Biotechnology and Genetic Engineering.
11. Department electives have to be modified by including courses of different specializations such as animal cell cultures, plant cell cultures and production technologies

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 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 2015-16 (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 2015 – 16**

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	74.3	19.8	5.3	0.3	0.3	4.675	Excellent
Q2	70	21.5	6.9	0	1.7	4.584	Excellent
Q3	18.5	70.3	10.2	1	0	4.063	Excellent
Q4	61.4	24.8	12.5	0.7	0.7	4.458	Excellent
Q5	20.5	70.6	6.6	1.7	0.7	4.088	Excellent
Q6	12.2	71.6	14.5	1.3	0.3	3.938	Very Good
Q7	62	29.4	7.9	0.3	0.3	4.522	Excellent
Q8	60.4	31	8.3	0	0.3	4.512	Excellent
Q9	63.4	27.1	8.3	1	0.3	4.526	Excellent

The highest score of 4.675 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 4.584 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 4.526 and 4.512 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 4.522 and 4.458 respectively and had been rated as Excellent, which clearly reflects the benefit towards the student expectations.

Average scores of 3.938, 4.088 and 4.063 were respectively 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 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 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 2015-16 (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 employers 2015 – 16**

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	0	100	0	0	0	4	Excellent
Q2	30.8	30.8	38.5	0	0	3.927	Very Good
Q3	0	76.9	23.1	0	0	3.769	Very Good
Q4	0	84.6	15.4	0	0	3.846	Very Good
Q5	38.5	53.8	7.7	0	0	4.308	Excellent

The highest score of 4.308 was given to the parameters namely “Applicability of the tools and technologies described in the curriculum will be enough to practice in Industry” and “Laboratory skills and theoretical concepts acquired by students through the course contents will enable them to be placed in MNC” and both had been rated as Very Good.

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 3.769 and rated as Good.

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 4.0 and 3.927 respectively and rated as Moderate.

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 2015-16 (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 2015 – 16**

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	50	35.7	14.3	0	0	4.357	Excellent
Q2	46.4	42.9	7.1	3.6	0	4.321	Excellent
Q3	53.6	46.4	0	0	0	4.536	Excellent
Q4	57.1	32.1	10.7	0	0	4.46	Excellent
Q5	53.6	46.4	0	0	0	4.536	Excellent
Q6	46.4	39.3	10.7	3.6	0	4.285	Excellent
Q7	53.6	42.9	3.6	0	0	4.504	Excellent
Q8	57.1	32.1	10.7	0	0	4.46	Excellent
Q9	53.6	35.7	3.6	7.1	0	4.358	Excellent

The highest score of 4.536 was given to the parameters namely "The allocation of Credits to the respective Courses is satisfiable" and "Electives will enable the passion to learn new technologies in emerging areas of Biotechnology" and both had been rated as Excellent. The parameters "The Composition of Basic Sciences, Engineering, Humanities and Management Courses in the curriculum is satisfiable", "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 Genetic Engineering and Bioprocess technical skills of students" obtained average scores of 4.504 and 4.46 respectively and rated as Excellent.

The parameters namely "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 scores of 4.357, 4.321, and 4.285 respectively and 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 2015-16 (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 2015 – 16**

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	50	40	0	10	0	4.3	Excellent
Q2	60	20	20	0	0	4.4	Excellent
Q3	30	20	20	10	20	3.3	Good
Q4	40	20	30	0	10	3.8	Very Good
Q5	40	30	10	0	20	3.7	Very Good
Q6	50	40	10	0	0	4.4	Excellent
Q7	90	10	0	0	0	4.9	Excellent

The highest score of 4.9 was given to the parameter namely “Current Curriculum is superior than your studied Curriculum” and rated as Excellent. The parameters namely “The Course Contents of Biotechnology Curriculum are in tune with the Program Outcomes” and “While comparing with your peers from other Universities, our curriculum provided technical skills” obtained an average score of 4.4 and both were rated as Excellent.

The parameters “The Curriculum laid a good foundation in understanding the basic engineering concepts in Biotechnology” “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 average score of 4.3, 3.8, and 3.7 respectively and rated as Excellent and Very good. The lowest score was obtained for “The Biotechnology Curriculum encompasses all the required Job Oriented Skills” with a score of 3.3 and rated as Good.

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 2015-16 (Academic Year) - UG – B. Tech (BT)

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

**Table 5: Analysis of feedback from parents 2015 – 16**

	Strongly Agree	Agree	Moderate	Disagree	Strongly Disagree	Avg. Rating	Grade
Q1	77.4	13.2	9.4	0	0	4.68	Excellent
Q2	77.4	13.2	7.5	1.9	0	4.661	Excellent
Q3	17	73.6	5.7	0	3.8	4.003	Excellent
Q4	77.4	11.3	7.5	0	3.8	4.585	Excellent
Q5	77.4	9.4	9.4	1.9	1.9	4.585	Excellent

The highest score of 4.661 was given to the parameter namely "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 rated as Excellent.

The parameters "Competency of your ward in Biotechnology is on par with the students from other Universities/Institutes" and "Course Contents of our Biotechnology Curriculum are in tune with the Industry demand" obtained average scores of 4.585 and rated as Excellent.

The parameter "The theoretical courses and practical sessions offered in our Biotechnology curriculum are satisfiable" obtained average score of 4.68 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 4.003 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.

  
**HOD, BT**