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## DEPARTMENT OF CHEMICAL ENGINEERING

### Minutes of CDMC Meeting- B.Tech Chemical Engineering

12-03-2020

The members of Curriculum Design and Monitoring Committee for B.Tech Chemical Engineering program gathered on 12-03-2020 in HoD Cabin, Chemical Engineering Department. The following members attended the meeting.

| S.No | Members                                 | Designation | Signatures |
|------|---|-------------|------------|
| 1.   | Dr. M. Ramesh Naidu<br>Professor & Head | Chairman    |            |
| 2.   | Dr. P. Ashok Kumar                      | Member      |            |
| 3.   | Dr. P. Bangariah                        | Member      |            |
| 4.   | Dr. B. Sumalatha                        | Member      |            |

#### Agenda of the meeting

Analysis of the feedback collected from various stakeholders such as Alumni, Employers, Faculty, Parents and Students during the academic year 2019-20.

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

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.

Times to time meetings were conducted at the department level to leverage new and advanced techniques to combat the learning difficulties of the students by considering their Employer's feedback.

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.

Detailed feedback analysis report is enclosed as Annexure-I



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2. Chairman – CDMC has prepared the draft curriculum to the members. (R19 Curriculum)

Following are the changes recommended by the members of CDMC in the revised curriculum course structure,

- (a) Major restructuring has been considered in the curriculum which is oriented towards Project based learning.
- (b) Inclusion of Intradisciplinary, Inter-departmental and Societal centric and industry related projects in the curriculum.
- (c) The curriculum comprises courses which facilitates employability or entrepreneurship or skill development.

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

  
Chairman, CDMC



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## Annexure -I

### Feedback from Alumni 2019-20 (Academic Year) - UG – B. Tech (CHEM)

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

- Q1 B.Tech – Chemical Engineering Curriculum has paved a good foundation in understanding the basic engineering concepts
- Q2 Course Contents of Curriculum in tune with the Program Outcomes
- Q3 B.Tech – Chemical Engineering Curriculum imparted all the required Job Oriented Skills for its core and allied industries
- Q4 Professional and Open Electives of B.Tech – Chemical Engineering Curriculum served the technical advancements needed to serve in the industry
- Q5 The activities, experiments planned during laboratory sessions are sufficient in the curriculum
- Q6 Are you in a position to compete with your peers from other Universities
- Q7 Current Regulation 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 ( $< 2$ ).

The result derived in terms of percentage of Alumni with common views, average score, and rating is presented in Table 1.

Table 1: Analysis of feedback from Alumni 2019–20

| Parameters | Rating 5 | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Average Score | Rating    |
|------------|----------|----------|----------|----------|----------|---------------|-----------|
| Q1         | 20       | 73.3     | 6.7      | 0        | 0        | 4.133         | Excellent |
| Q2         | 13.3     | 60       | 26.7     | 0        | 0        | 3.866         | Very Good |
| Q3         | 33.3     | 40       | 20       | 6.7      | 0        | 3.999         | Very Good |
| Q4         | 13.3     | 80       | 6.7      | 0        | 0        | 4.066         | Excellent |
| Q5         | 26.7     | 40       | 33.3     | 0        | 0        | 3.934         | Very Good |
| Q6         | 13.3     | 60       | 26.7     | 0        | 0        | 3.866         | Very Good |
| Q7         | 26.7     | 53.3     | 13.3     | 6.7      | 0        | 4             | Excellent |



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Parameter 'B.Tech – Chemical Engineering Curriculum has paved a good foundation in understanding the basic engineering concepts' is rated Excellent with average rating as 4.133.

Parameter 'Course Contents of Curriculum in tune with the Program Outcomes' is rated Very Good with average rating as 3.866.

Parameter 'B.Tech – Chemical Engineering Curriculum imparted all the required Job Oriented Skills for its core and allied industries?' is rated Very Good with average rating as 3.999.

Parameter 'Professional and Open Electives of B.Tech – Chemical Engineering Curriculum served the technical advancements needed to serve in the industry' is rated Excellent with average rating as 4.066.

Parameter 'The activities, experiments planned during laboratory sessions are sufficient in the curriculum' is rated Very Good with average rating as 3.934.

Parameter 'Are you in a position to compete with your peers from other Universities' is rated Very Good with average rating as 3.866.

Parameter 'Current Regulation Curriculum is superior than your studied Curriculum' is rated Excellent with average rating as 4.

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 from Employers 2019-20 (Academic Year) - UG – B. Tech (CHEM)**

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

- |           |  |
|-----------|--|
| <b>Q1</b> | Course Contents of B.Tech - Chemical Engineering Curriculum are in tune with the Program Outcomes.                         |
| <b>Q2</b> | Course Contents designed to enable skills and knowledge required for Chemical and allied Industry Demands.                 |
| <b>Q3</b> | Professional Electives and Open Elective are in-line with the technological advancements.                                  |
| <b>Q4</b> | Curriculum imparted all the required Skills for Chemical and relevant industry related Skills.                             |
| <b>Q5</b> | Problem Solving and Soft Skills 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 ( $< 2$ ).

The result derived in terms of percentage of Employers with common views, average score, and rating is presented in Table 2.

**Table 2: Analysis of feedback from Employers 2019–20**

| Parameters | Rating 5 | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Average Score | Rating    |
|------------|----------|----------|----------|----------|----------|---------------|-----------|
| Q1         | 14.3     | 42.9     | 42.9     | 0        | 0        | 3.718         | Very Good |
| Q2         | 28.6     | 42.9     | 28.6     | 0        | 0        | 4.004         | Excellent |
| Q3         | 71.4     | 0        | 28.6     | 0        | 0        | 4.428         | Excellent |
| Q4         | 42.9     | 14.3     | 42.9     | 0        | 0        | 4.004         | Excellent |
| Q5         | 42.9     | 28.6     | 28.6     | 0        | 0        | 4.147         | Excellent |

Parameter 'Course Contents of B.Tech - Chemical Engineering Curriculum are in tune with the Program Outcomes.' is rated Very Good with average score as 3.718.

Parameter 'Course Contents designed to enable skills and knowledge required for Chemical and allied Industry Demands.' is rated excellent with average score as 4.004.

Parameter 'Professional Electives and Open Elective are in-line with the technological advancements.' is rated Excellent with average score as 4.428.

Parameter 'Curriculum imparted all the required Skills for Chemical and relevant industry related Skills' is rated Excellent with average score as 4.004.

Parameter 'Problem Solving and Soft Skills acquired by the students through the course contents will enable them to be placed in MNC' is rated Excellent with average score as 4.147.

Time to time meetings were conducted at the department level to leverage new and advanced techniques to combat the learning difficulties of the students by considering their Employer's feedback.

#### **Feedback from Faculty 2019-20 (Academic Year) - UG – B. Tech (CHEM)**

Feedback has been received from the Faculty on the following nine parameters: (2019-20)





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- Q1 Course Contents of B.Tech - Chemical Engineering Curriculum are in tune with the Program Outcomes.
- Q2 Course Contents of B.Tech - Chemical Engineering enhances the Problem Solving Skills and Core competencies
- Q3 Allocation of Credits to the Courses is appropriate.
- Q4 Contact Hour Distribution among the various Course Components (LTP) is appropriate.
- Q5 Electives cover the frontier technologies in the field of Chemical and allied industries
- Q6 Curriculum providing opportunity towards Self learning to realize the expectations
- Q7 Composition of Basic Sciences, Engineering, Humanities and Management Courses are appropriate.
- Q8 Laboratory sessions sufficient to improve the technical skills of students
- Q9 Sufficient courses available to 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 ( $< 2$ ).

The result derived in terms of percentage of Faculty with common views, average score, and rating is presented in Table 3.

**Table 3: Analysis of feedback from Faculty 2019–20**

| Parameters | Rating 5 | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Average Score | Rating    |
|------------|----------|----------|----------|----------|----------|---------------|-----------|
| Q1         | 71.4     | 14.3     | 0        | 0        | 14.3     | 4.285         | Excellent |
| Q2         | 85.7     | 14.3     | 0        | 0        | 0        | 4.857         | Excellent |
| Q3         | 57.1     | 42.9     | 0        | 0        | 0        | 4.571         | Excellent |
| Q4         | 71.4     | 14.3     | 14.3     | 0        | 0        | 4.571         | Excellent |
| Q5         | 57.1     | 42.9     | 0        | 0        | 0        | 4.571         | Excellent |
| Q6         | 85.7     | 0        | 14.3     | 0        | 0        | 4.714         | Excellent |
| Q7         | 85.7     | 14.3     | 0        | 0        | 0        | 4.857         | Excellent |
| Q8         | 57.1     | 28.6     | 14.3     | 0        | 0        | 4.428         | Excellent |
| Q9         | 57.1     | 28.6     | 0        | 14.3     | 0        | 4.285         | Excellent |



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Parameter 'Course Contents of B.Tech - Chemical Engineering Curriculum are in tune with the Program Outcomes' is rated Excellent with average rating as 4.285.

Parameter 'Course Contents of B.Tech - Chemical Engineering enhances the Problem Solving Skills and Core competencies' is rated Excellent with average rating as 4.857.

Parameter 'Allocation of Credits to the Courses are appropriate.' is rated Excellent with average rating as 4.571.

Parameter 'Contact Hour Distribution among the various Course Components (LTP) are appropriate.' is rated Excellent with average rating as 4.571.

Parameter 'Electives cover the frontier technologies in the field of Chemical and allied industries' is rated Excellent with average rating as 4.571.

Parameter 'Curriculum providing opportunity towards Self learning to realize the expectations' is rated Excellent with average rating as 4.714.

Parameter 'Composition of Basic Sciences, Engineering, Humanities and Management Courses are appropriate.' is rated Excellent with average rating as 4.857.

Parameter 'laboratory sessions sufficient to improve the technical skills of students' is rated Excellent with average rating as 4.428.

Parameter 'Sufficient courses available to improve the technical competency and leadership skills among the students.' is rated Excellent with average rating as 4.285.

Time to time meetings were conducted at the department level to leverage new and advanced techniques to combat the learning difficulties of the students.

#### **Feedback from Parents 2019-20 (Academic Year) - UG – B. Tech (CHEM)**

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

- |           |  |
|-----------|--|
| <b>Q1</b> | Course Contents of B.Tech - Chemical Engineering Curriculum are in tune with the Program Outcomes.                                 |
| <b>Q2</b> | B.Tech - Chemical Engineering Curriculum helped improving technical knowledge acquired by your son / daughter in our University.   |
| <b>Q3</b> | B.Tech - Chemical Engineering Curriculum helped improving Academic, Emotional Progression of your son / daughter in our University |
| <b>Q4</b> | Proficiency of your son / daughters on par with the students from other Universities/Institutes                                    |
| <b>Q5</b> | Course Contents designed to enable skills and knowledge required for chemical industries.  |



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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 ( $< 2$ ).

The result derived in terms of percentage of Parents with common views, average score, and rating is presented in Table 4.

**Table 4: Analysis of feedback from Parents 2019–20**

| Parameters | Rating 5 | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Average Score | Rating    |
|------------|----------|----------|----------|----------|----------|---------------|-----------|
| Q1         | 60.6     | 18.2     | 19.7     | 0        | 1.5      | 4.364         | Excellent |
| Q2         | 60.6     | 24.2     | 13.6     | 0        | 1.5      | 4.421         | Excellent |
| Q3         | 60.6     | 22.7     | 13.6     | 0        | 3        | 4.376         | Excellent |
| Q4         | 60.6     | 16.7     | 19.7     | 0        | 3        | 4.319         | Excellent |
| Q5         | 53       | 9.1      | 34.8     | 0        | 3        | 4.088         | Excellent |

Parameter 'Course Contents of B.Tech - Chemical Engineering Curriculum are in tune with the Program Outcomes.' is rated Excellent with average score as 4.395.

Parameter 'B.Tech - Chemical Engineering Curriculum helped improving technical knowledge acquired by your son / daughter in our University' is rated Excellent with average score as 4.437.

Parameter 'B.Tech - Chemical Engineering Curriculum helped improving Academic, Emotional Progression of your son / daughter in our University' is rated Excellent with average score as 4.437.

Parameter 'Proficiency of your son / daughters on par with the students from other Universities/Institutes' is rated Excellent with average score as 4.395.

Parameter 'Course Contents designed to enable skills and knowledge required for chemical industries.' is rated Excellent with average score as 4.212.

Time to time meetings were conducted at the department level to leverage new and advanced techniques to combat the learning difficulties of the students by considering their parent's feedback.





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

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

- Q1 Course Contents of B.Tech - Chemical Engineering Curriculum are in tune with the Program Outcomes
- Q2 Course Contents designed to enable skills and knowledge required for process Design, optimization, modeling, quality control, analysis and hazardous chemicals handling for several chemical and allied industries.
- Q3 Courses placed in the B.Tech - Chemical Engineering curriculum serves the needs of both Advanced and Average learners.
- Q4 Contact Hour Distribution among the various Course Components (LTP) is Satisfiable.
- Q5 Electives have enabled the passion to learn new technologies in emerging areas
- Q6 B.Tech - Chemical Engineering Curriculum providing opportunity towards Self learning to realize the expectations
- Q7 Composition of Basic Sciences, Engineering, Humanities and Management Courses is a right mix and appropriate in B.Tech - Chemical Engineering curriculum.
- Q8 No. of Laboratory sessions sufficient to improve the technical skills
- Q9 Sufficient courses available to improve 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 ( $< 2$ ).

The result derived in terms of percentage of students with common views, average score, and rating is presented in Table 5.

**Table 5: Analysis of feedback from students 2019–20**

| Parameters | Rating 5 | Rating 4 | Rating 3 | Rating 2 | Rating 1 | Average Score | Rating    |
|------------|----------|----------|----------|----------|----------|---------------|-----------|
| Q1         | 66.7     | 22.9     | 10.5     | 0        | 0        | 4.566         | Excellent |
| Q2         | 51.4     | 38.1     | 10.5     | 0        | 0        | 4.409         | Excellent |
| Q3         | 78.1     | 21.9     | 0        | 0        | 0        | 4.781         | Excellent |
| Q4         | 78.1     | 21.9     | 0        | 0        | 0        | 4.781         | Excellent |
| Q5         | 82.9     | 17.1     | 0        | 0        | 0        | 4.829         | Excellent |
| Q6         | 64.8     | 24.8     | 10.5     | 0        | 0        | 4.547         | Excellent |
| Q7         | 69.5     | 3.8      | 26.7     | 0        | 0        | 4.428         | Excellent |
| Q8         | 68.6     | 24.8     | 6.7      | 0        | 0        | 4.623         | Excellent |
| Q9         | 78.1     | 21.9     | 0        | 0        | 0        | 4.781         | Excellent |



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Parameter 'Course Contents designed to enable skills and knowledge required for process Design, optimization, modeling, quality control, analysis and hazardous chemicals handling for several chemical and allied industries.' is rated Excellent with average score as 4.566.

It is clearly visible from the table that the parameters "Composition of Basic Sciences, Engineering, Humanities and Management Courses is a right mix and appropriate in B.Tech – Chemical Engineering curriculum" and "No. of Laboratory sessions sufficient to improve the technical skills" obtained average scores 4.428 and 4.623 respectively and has been rated as Excellent.

The parameters "Courses placed in the B.Tech – Chemical Engineering curriculum serves the needs of both Advanced and Average learners"; "B.Tech – Chemical Engineering Curriculum providing opportunity towards self learning to realize the expectations." And "Sufficient courses available to improve technical competency and leadership skills among the students" obtained the scores of 4.781, 4.547 and 4.781 respectively and has been rated as Excellent which clearly reflects the benefit towards the student expectations.

Average scores of 4.409 and 4.829 were obtained by the parameters "Contact Hour Distribution among the various Course Components (LTP) is satisfiable"; "Electives have enabled the passion to learn new technologies in emerging areas" are 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.

  
Chairman, CDMC