**L E College, Morbi**

**Chemical Engineering Department**

**Course Title : Chemical Reaction Engineering II**

**Course Code : 3170501**

**B.E. Semester: VII**

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| --- | --- | --- |
| **Degree Programs in which this course is offered** | **Pre-requisite Course** | CRE-II |
|  | **Co-requisite Course** | **CRE-I** |
| **Type of Course** | Core |
| **Course Difficulty level** |  |
| **Course offered in Academic year** | 2022-2023 |

1. **TEACHING AND EXAMINATION SCHEME**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Teaching Scheme(In Hours) | | | Total Credits **(L+T+P)** | Examination Scheme | | | | |
| **Theory Marks** | | Practical Marks | | Total Marks |
| L | **T** | **P** | **C** | **ESE (E)** | PA (M) | **ESE (V)** | **PA (I)** | **150** |
| 3 | 0 | 2 | 4 | 70 | 30 | 30 | 20 |

**Legends: L -** Lecture; **T -** Tutorial/Teacher Guided Student Activity; **P -** Practical; **SS** – Self Study**C -** Credit;

**ESE** -End Semester Examination; **PA** - Progressive Assessment

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Direct Assessment | | | | | |
|  | Internal Evaluation | | | | External(Uni.) Evaluation | |
|  | Mid Sem Exam/Class Test/ (Theory) | Theory Assignments | Lab. Work | Practical Assignment | Practical/ Viva | Uni. Exam (Theory) |
| Max. Marks | 20 | 10 | 10 | 10 | 30 | 70 |
| % Weightage (Theory) | 20 | 10 | NA | NA | NA | 70 |
| % Weightage (Practical) | NA | NA | 20 | 20 | 60 | NA |
| % Weightage (overall) | 13% | 7% | 7% | 7% | 20% | 47% |

1. **ASSESSMENT SCHEME**
2. End Semester GTU theory examinations - 70 marks equivalent (70% weightage in theory in final theory grade)
3. Mid semester examination/Remid Examination – 20 marks equivalent (20% weightage in theory in final theory grade)
   1. Rubric given in Annexure – I.
4. Assignments or special topics for theory part – 10 marks equivalent (10% weightage in theory in final theory grade)
   1. Rubric given in Annexure – II
5. End Semester GTU practical viva/examinations - 30 marks equivalent (60% weightage in practical in final practical grade)
6. Regular laboratory work and lab file submission
   1. 10 marks equivalent (20% weightage in practical in final practical grade).
   2. Rubric given in Annexure – III.
7. Laboratory Project/new laboratory setup fabrication/special assignment work
   1. 10 marks equivalent (20% weightage in practical in final practical grade).
   2. Rubric given in Annexure – IV.

Annexure – I

| Rubric for Mid semester/Remid/Class test/Online Test Examination (Max marks 20) (for Chemical Reaction Engineering II Course) |
| --- |
| Based on students’ performance marks in range of 0 marks to 20 marks maximum (equivalent basis means if mid sem exam conducted having 30 marks total, its equivalent 20 marks will be used in attainment and overall result preparation). |

Annexure – II

| ***Criterion***  ***(weight)*** | Rubric for Assignments or special topics for theory part (Max marks 10) **(for Chemical Reaction Engineering II Course)** | | | |
| --- | --- | --- | --- | --- |
| ***Assessment of Criterion***  ***(Note: Assigned score within a range is assessment of degree criterion is met.)*** | | | |
| ***Exceeds expectations*** | ***Meets expectations*** | ***Below expectations*** | ***Not acceptable*** |
| ***Meeting Performance*** | | | | |
| ***Completed/Submitted work*** | * Quality of submitted work exceeds expectations ***(range 4.0-5.0)*** | * Quality of submitted work meet expectations   ***(range 3.0-4.0)*** | * Quality of submitted work below expectations   ***(range 2.0-3.0)*** | * Quality of submitted work not acceptable * ***(range 0.0-1.9)*** |
| ***Extent of learning*** | * Learn beyond expectations * ***(range 4.0-5.0)*** | * Learn upto expectations * ***(range 3.0-4.0)*** | * Learn below expectations * ***(range 2.0-3.0)*** | * Learn level not acceptable * ***(range 0.0-1.9)*** |

Annexure – III

| ***Criterion*** | Rubric for regular laboratory work and lab file submission (Max marks 10) **(for Chemical Reaction Engineering II Course)** | | | |
| --- | --- | --- | --- | --- |
| ***Assessment of Criterion***  ***(Note: Assigned score within a range is assessment of degree criterion is met.)*** | | | |
| ***Exceeds expectations*** | ***Meets expectations*** | ***Below expectations*** | ***Not acceptable*** |
| ***Meeting Performance*** | | | | |
| ***Present in Schedule laboratory session*** | * Always remains present ***(range 2)*** | * Mostly attends meetings ***(range 1.5-1.9)*** | * Occasionally not attends meeting ***(range 1-1.5)*** | * Irregular in attending lab sessions ***(range 0-0.9)*** |
| ***Participation in laboratory experiment performance*** | * Always a willing participant * Responds frequently to questions * Routinely volunteers point of view ***(range 3)*** | * Often a willing participant * Responds occasionally to questions * Occasionally volunteers point of view ***(range 2-2.9)*** | * Rarely a willing participant * Rarely able to respond to questions * Rarely volunteers point of view ***(range 1-1.9)*** | * Never a willing participant * Never able to respond to questions * Never volunteers point of view ***(range 0-0.9)*** |
| ***Regular submission and checking of laboratory experiment file*** | * File prepared with all contents and conclusions and get checked on regular basis without fail **(range 3)** | * File prepared with most of contents and conclusions and get checked on regular basis but miss sometime **(range2-2.9)** | * File prepared with missing many contents and improper conclusions. Not get checked on regular basis. **(range1-1.9)** | * File not prepared well and not get checked on regular basis. **(range0-0.9)** |
| ***Demonstration of professional attitude and demeanour*** | * Always demonstrates commitment through preparation * Always plan activities and follow it ***(range 2)*** | * Rarely unprepared * Always plan activities and often follow it. ***(range 1.5-1.9)*** | * Often unprepared * Plan activities but does not meet the time schedule ***range 1-1.5)*** | * Rarely prepared * Does not plan activities and follow any systematic approach ***(range 0-0.9)*** |

Annexure – IV

| ***Criterion*** | Rubric for Laboratory Project/new laboratory setup fabrication/special assignment work (Max marks 10)  **(for Chemical Reaction Engineering II Course)** | | | |
| --- | --- | --- | --- | --- |
| ***Assessment of Criterion***  ***(Note: Assigned score within a range is assessment of degree criterion is met.)*** | | | |
| ***Exceeds expectations*** | ***Meets expectations*** | ***Below expectations*** | ***Not acceptable*** |
| ***Meeting Performance*** | | | | |
| ***Completed/Submitted work*** | * Quality of submitted work exceeds expectations ***(range 4.0-5.0)*** | * Quality of submitted work meet expectations   ***(range 3.0-4.0)*** | * Quality of submitted work below expectations   ***(range 2.0-3.0)*** | * Quality of submitted work not acceptable * ***(range 0.0-1.9)*** |
| ***Work in team and Extent of learning*** | * Excellent work as a team and Learn beyond expectations * ***(range 4.0-5.0)*** | * Very good team work and Learn upto expectations * ***(range 3.0-4.0)*** | * As a team poor work and Learn below expectations * ***(range 2.0-3.0)*** | * No team work and Learn level not acceptable * ***(range 0.0-1.9)*** |