**L E College, Morbi**

**Chemical Engineering Department**

**Course Title : Chemical Reaction Engineering II**

**Course Code : 3170501**

**B.E. Semester: VII**

|  |  |  |
| --- | --- | --- |
| **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)***
 |