KPR Institute of Engineering and Technology

Learn Beyond

(Autonomous, NAAC "A")

Regulations 2021

(Choice Based Credit System)

(Amended)

B.E. / B.Tech. Programmes

KPR INSTITUTE OF ENGINEERING AND TECHNOLOGY, COIMBATORE
(Autonomous, NAAC "A")

REGULATIONS 2021
(Choice Based Credit System)

(Common to all B.E. / B. Tech. Degree Programmes)

DEGREE OF BACHELOR OF ENGINEERING / BACHELOR OF TECHNOLOGY

The Regulations 2021 is applicable to the students admitted to the first year B.E/B.Tech. Programmes of the Institution from the academic year 2021-2022 onwards.

The regulations hereunder are subjected to amendments as may be decided by the Academic Council of the Institution from time to time. Any or all such amendments will be effective from such date and to such batches of students (including those already in the middle of the programme) as may be decided by the Academic Council.

1   PRELIMINARY DEFINITIONS AND NOMENCLATURE
          In these Regulations, unless the context otherwise requires:

i)   "**Programme**" means Degree Programme, that is B.E./B.Tech. Degree Programme.

ii)   "**Discipline**" means specialization or branch of B.E./B.Tech. Degree Programme, like Civil Engineering, Computer Science and Engineering, etc.

iii)   "**Course**" means a theory or practical subject that is normally studied in a semester, like Mathematics, Physics, etc.

iv)   **"Head of the Institution"** means the Principal of the College.

v)   **"Head of the Department"** means Head of the Department concerned.

vi)   **"Chairperson / BoS"** means Head of the Department concerned.

vii)   **"Controller of Examinations (CoE)"** means the authority of the college who is responsible for all activities of the Examinations concerned.

viii)   **"Head, Centre for Academic Courses"** means the authority of the college who is responsible for all academic activities for the implementation of relevant rules and regulations.

ix)   **"University"** means the affiliating university, viz., Anna University, Chennai.

2   ADMISSION

2.1   Candidates seeking admission to the first semester of the eight semesters B.E. / B.Tech. Degree Programme:

Should have passed the Higher Secondary Examinations of (10+2) Curriculum (Academic Stream) prescribed by the Government of Tamil Nadu with Mathematics, Physics and Chemistry as three of the four subjects of study under Part-III or any examination of any

other University or authority accepted by the Syndicate of Anna University as equivalent thereto.

(OR)

Should have passed the Higher Secondary Examination of Vocational stream (Vocational groups in Engineering / Technology) as prescribed by the Government of Tamil Nadu.

2.2 **Lateral entry admission**
i) The candidates who possess the Diploma in Engineering / Technology awarded by the State Board of Technical Education, Tamil Nadu or its equivalent are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech. as per the rules fixed by Government of Tamil Nadu.

(OR)

ii) The candidates who possess the Degree in Science (B.Sc.,) (10+2+3 stream) with Mathematics as a subject at the B.Sc. Level are eligible to apply for Lateral entry admission to the third semester of B.E. / B.Tech. Such candidates shall undergo two additional Engineering subject(s) in the **third and fourth semesters** as prescribed by the College.

3 **PROGRAMMES OFFERED**

The following are the branches of study under B. E / B. Tech degree programme.

B. E. Programmes

i. Biomedical Engineering
ii. Civil Engineering
iii. Computer Science and Engineering
iv. Electrical and Electronics Engineering
v. Electronics and Communication Engineering
vi. Mechanical Engineering
vii Computer Science and Engineering (Artificial Intelligence and Machine Learning)
viii Mechatronics Engineering

B. Tech. Programmes

i. Chemical Engineering
ii. Artificial Intelligence and Data Science
iii Computer Science and Business Systems
iv Information technology

4 **STRUCTURE OF PROGRAMMES**

4.1 **Categorization of Courses**
Every B.E. / B. Tech. Programme will have a curriculum with syllabi consisting of theory and practical courses that shall be categorized as follows:

i) **Humanities Social Sciences and Management Courses (HSMC)** courses include English, Communication skills, subjects of Management studies etc.

ii) **Basic Sciences Courses (BSC)** include Mathematics, Physics, Chemistry etc.

iii) **Engineering Sciences Courses (ESC)** include Manufacturing practice, Engineering Graphics, Basics of Electrical/Electronics/Mechanical/Computer Programming etc.

iv) **Professional Core Courses (PCC)** include the core courses relevant to the chosen specialization/branch.

v) **Professional Elective Courses (PEC)** include the elective courses relevant to the chosen specialization/ branch.

vi) **Open Elective Courses (OEC)** include the courses offered by a branch to other branches, from the list specified in the respective curriculum of the B.E. / B. Tech. Programmes. Also, OEC are offered by various centres such as Centre for Research and Development (CFRD), Centre for Innovation, Incubation and Entrepreneurship Development (CIIED) etc.,

vii) **Employability Enhancement Courses (EEC)** include Project Work, Industrial Training/Internship, Industry oriented courses, Liberal Arts Courses, Online courses and Value-Added Courses.

viii) **Mandatory Non-credit courses (MNC)** expose the students to induction program, Environmental Sciences, Essence of Indian traditional knowledge, Indian Constitution, Cyber Security Essentials, and Introduction to UN- SDG's: An Integrative Approach. Registration for these courses is mandatory for all the students.

4.2 Personality and Character Development
All students shall enrol, on admission, in any one of the personality and character development programmes NCC/NSS/UBA/SPORTS & GAMES/YRC and undergo training / conduct activities for about 80hours and attend a camp of about seven days. The training shall include classes on hygiene and health awareness and also training in first-aid. Alternately, activities of Technical Club Houses and Cultural Club Houses also help for personality and character development. So, students shall conduct and participate actively in activities of the technical clubs/Cultural clubs for 80 hours and participate in at least ONE event.

National Cadet Corps (NCC) will have about 20 parades.

National Service Scheme (NSS) / Unnat Bharat Abhiyan (UBA) will have social service activities in and around the College/ Institution.

Physical Education Department will have Sports, Games, Drills and Physical exercises.

Youth Red Cross (YRC) will have activities related to social services in and around College/Institutions.

While the training activities will normally be during weekends, the camp will normally be during vacation period.

Technical club houses will have activities related to technical happenings around the world, which includes conducting various interactive workshops and hands on fun teaching sessions.

Cultural Club houses will have activities related to Literary and Fine Arts. Various enjoyable events are to be conducted under this club houses to enrich our understanding of various different cultures and practices and introduce new exotic art forms from around the globe.

Students who enroll and take active participation in anyone of the above activities for 80 hours and participate at least one event/programme will be given a certificate by the Head of the Institution and the copy of the same shall be forwarded to the Controller of Examinations for the purpose of record and scrutiny.

No fee shall be charged for all these activities.

4.3   Number of courses per semester
Courses may be classified as Theory courses, Laboratory Courses, Theory courses with Laboratory component, Theory courses with Project component and Laboratory courses with Project component. The total number of Courses per semester shall not exceed 10 including Employability Enhancement Course(s). Each Course shall have credits assigned as per clause 4.4

4.4   Credit Assignment
The total credit requirement for successful completion of the B.E/B.Tech (Four Year programme) programme of study in the respective branches listed in clause 3, by a student to qualify for the award of degree is 165 and that for the lateral entry students is 122-127.

Each course is assigned certain number of credits based on the following:

Contact period per week	CREDITS
1 Lecture Period (L)	1
1 Tutorial Period (T)	1
2 Laboratory Period (P)	1
2 Project Period (J)	1

4.5   Industrial Training/ Internship (summer / winter vacation)
Students shall undergo a minimum 4 weeks of industrial training/internship as part of the curriculum and earn 2 credits which is mandatory to complete the programme. The industrial training/internship shall be completed in 2 spells of 2 weeks each at research organizations / reputed academic institutions / industries after Semester III, during winter / summer vacation. A student can also take up 4 weeks of industrial training/internship at a stretch with the approval of Departmental Consultative Committee (DCC).

Attendance Certificate signed by the competent authority of the industry, as per the format provided by Centre for Academic Courses shall be submitted to the Head of the Department. The attendance certificate shall be forwarded to COE by the Head of the Department for processing results.

4.6   Industrial Visit
Every student is required to go for at least one Industrial Visit every semester starting from the second year of the Programme. The Heads of Departments shall ensure that necessary arrangements are made in this regard.

4.7   Value Added Courses / Industry Oriented Courses / Liberal Arts Courses
4.7.1   Value Added Courses
The students may optionally undergo Value Added Courses (VAC) and the credits earned through the Value-Added Courses shall be over and above the total credit requirement prescribed in the curriculum for the award of the degree. One / Two credit courses shall be offered by a Department of an institution with the prior approval from the Head of the Institution and Centre for Academic Courses. On completion of the course, credits earned will be indicated in the semester grade sheet as well as in the consolidated grade sheet as additional credits. These additional credits will not be considered for GPA/CGPA calculations. The details of the syllabus, time table and course coordinator may be sent to the Centre for Academic Courses at least one month before the course is offered for approval.

4.7.2   Industry Oriented Courses / Liberal Arts Courses
The students may optionally undergo Industry Oriented Courses / Liberal Arts Courses.

One credit Industry Oriented Courses with the duration of 15 hours shall be offered by the experts from the industry on recent topics. The details of the course shall be recommended by the Department Consultative Committee and approved by Head of the Institution. Students can take a maximum of three credits during the entire duration of the Programme. If the student earns three credits in Industry Oriented Courses, the student may drop one **Professional Elective.** Otherwise, credits earned by the students will be indicated in the semester grade sheet as well as in the consolidated grade sheet as additional credits. In such case, these additional credits will not be considered for GPA/CGPA calculations.

One credit Liberal Arts Courses with the duration of 15 hours shall be offered by the centre for Liberal Arts Courses with the prior approval from the Head of the Institution and Centre for Academic Courses. If the student earns three credits in Liberal Arts Courses, the student may drop one **Open Elective.** Otherwise, credits earned by the students will be indicated in the semester grade sheet as well as in the consolidated grade sheet as additional credits. In such case these additional credits will not be considered for GPA/CGPA calculations.

4.8   Online Courses
Students may be permitted to credit a maximum of two online courses subject to a maximum of six credits, with the approval of Head of the Institution and Centre for Academic Courses, **in lieu of professional elective courses.** The Head of the Institution shall form a three-member committee with members as HOD and a faculty member from the Department of student, HOD of any other branch of the Institution to ensure that the student has not studied such course and would not repeat it again as Professional core/professional elective. These online courses shall be chosen from the **SWAYAM platform / MOOC courses with proctored examination**. The details regarding online courses taken up by student and marks/credits earned should be sent to the Controller of Examinations in the subsequent semester(s) along with the details of the professional elective to be dropped.

Otherwise, credits earned by the students will be indicated in the semester grade sheet as well as in the consolidated grade sheet as additional credits. In such case these additional credits will not be considered for GPA/CGPA calculations.

4.9   National / International Professional Certification Courses
Students may optionally undergo National/International professional certification courses, and if a student successfully completes the course, 1 / 2 / 3 credits may be allotted with prior approval from the Head of the Institution and the Centre for Academic Courses. If the student earns three credits, the student may drop **one Professional Elective**.

Otherwise, the credits earned by the student will be indicated in the semester grade sheet and in the consolidated grade sheet as additional credits. These additional credits will not be considered for GPA/CGPA calculations.

4.10   Micro Specialization Courses
Students may optionally undergo Micro Specialization offered by the departments. The students should have earned a minimum of 12 credits additionally in any one of the following verticals from 3rd semester. Upon Successful completion of the courses, it will be indicated in the semester grade sheet and in the consolidated grade sheet.
Vertical I : Motors for Engineering Applications
Vertical II : Water and Water Treatment
Vertical III : Long Term English

4.11   Mandatory Non-credit Courses
Induction training programme shall be offered at the start of the first year for the period of three weeks. The mandatory non-credit courses mentioned in clause 4.1 shall be offered as part of the curriculum and to be conducted not less than 20 hours.

4.12   Capsule Courses - Non-Mandatory Non-Credit Courses
Students may optionally undergo Capsule Courses (6 – 8 hours). Upon completion of the course, it will be indicated in the semester grade sheet and in the consolidated grade sheet.
1. Blog Writing
2. Story Telling for Image Building
3. திருக்குறள்- அறத்துப்பால்
4. திருக்குறள்-பொருட்பால்

4.13   Medium of Instruction
The medium of instruction is English for all courses, examinations, seminar presentations and project reports.

5   DURATION OF THE PROGRAMME

5.1   A student is expected to complete the B.E. / B.Tech. Programme in 8 semesters (for HSC students) and six semesters (for Lateral Entry students) but in any case, not more than 14 Semesters for HSC (or equivalent) students and not more than 12 semesters for Lateral Entry students.

5.2   Each semester shall normally consist of 75 working days or 540 periods of 50 minutes each. The Head of the Institution shall ensure that every teacher imparts instruction as per the number of periods specified in the syllabus and that the teacher teaches the full content of the specified syllabus for the course being taught.

5.3   The Head of the Department may conduct additional classes for improvement, special coaching, conduct of model test etc., over and above the specified periods. But for the purpose of calculation of attendance requirement for writing the end semester examinations (as per clause 7) by the students, following method shall be used.

$$\text{Percentage of Attendance} = \frac{\text{Total no. of periods attended in all the courses per semester}}{(\text{No. of periods / week as prescribed in the curriculum}) \times 15 \text{ taken together for all courses of the semester}} \times 100$$

The End Semester Examination will normally follow immediately after the last working day of the semester as per the academic schedule prescribed from time to time by the Centre for Academic Courses.

5.4 The total period for completion of the programme reckoned from the commencement of the first semester to which the student was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study (vide clause 17) in order that he/she may be eligible for the award of the degree (vide clause 15).

6 COURSE REGISTRATION

6.1 Each student, on admission, shall be assigned to a mentor (vide clause 8), who shall advice and counsel the student about the details of the academic programme and the choice of courses, considering the student's academic background and career objectives.

6.2 After registering for a course, a student shall attend the classes, satisfy the attendance requirements, earn Continuous Assessment marks and appear for the End Semester Examinations.

6.2.1 Each student on admission shall register for all the courses prescribed in the curriculum during the first Semester.

6.2.2 The enrolment for the courses from the II Semester to Final Semester will commence 5 working days prior to the commencement of the succeeding semester. If the student wishes, the student may drop or add courses (vide clause 6.3) within 5 working days after the commencement of the semester concerned and complete the registration process duly authorized by the mentor of the Programme.

6.2.3 A student who has passed all the courses prescribed in the curriculum for the award of the degree shall not be permitted to re-register to improve the student's marks in a course or the aggregate marks / CGPA.

6.2.4 If a student fails in a professional elective course, he/she may be permitted to register for different professional elective course(s) in lieu of professional elective course, the student had fail to clear, in the subsequent semester in addition to the course of the current semester.

The maximum number of credits that can be registered in a semester is 36. However, this does not include the number of Re-appearance (RA) and Withdrawal (W) courses registered by the student for the appearance of Examination.

6.3 Flexibility to Add or Drop courses
6.3.1 A student has to earn the total number of credits specified in the curriculum of the respective Programme of study in order to be eligible to obtain the degree. However, if the student wishes, the student is permitted to earn more than the total number of credits prescribed in the curriculum of the student's programme within the minimum duration of the programme

6.3.2 From the Semester II to VII , the student has the option of registering for additional courses or dropping existing courses in a semester during registration. The Total number of credits of such courses shall not exceed 6 per semester. The student is permitted to add or drop course(s) within 5 days of the commencement of the academic schedule.

7   ATTENDANCE REQUIREMENTS FOR COMPLETION OF THE SEMESTER

7.1   A student who has fulfilled the following conditions shall be deemed to have satisfied the requirements for completion of a semester.

Ideally every student is expected to attend all classes of all the courses and secure 100% attendance. However, in order to give provision for certain unavoidable reasons such as Medical / participation in sports, the student is expected to attend at least 75% of the classes.

Therefore, he/she shall **secure not less than 75%** (after rounding off to the nearest integer) of overall attendance as calculated as per clause 5.3.

7.2   However, a student who secures overall attendance between 65% and 74% in the current semester due to medical reasons (prolonged hospitalization / accident / specific illness) / Participation in Sports events may be permitted to appear for the current semester examinations subject to the condition that the student shall submit the medical certificate / sports participation certificate attested by the Head of the Institution. The same shall be forwarded to the Controller of Examinations for record purposes.

7.3   Students who **secure less than 65% overall attendance** shall not be permitted to write the End Semester Examination and not permitted to move to the next semester. They are required to repeat the incomplete semester in the next academic year, as per the norms prescribed.

8   MENTOR

To help the students in planning their courses of study and for general advice on the academic programme, the Head of the Department of the students will attach a certain number of students to a teacher of the Department, who shall function as Mentor for those students throughout their period of study. The Mentor shall advise the students in registering and reappearance (Arrear) registering of courses, authorize the process, monitor their attendance and progress and counsel them periodically. If necessary, the Mentor may also discuss with or inform the parents about the progress / performance of the students concerned. The responsibilities for the mentor shall be:

i)   To inform the students about the various facilities and activities available in order to enhance the student's curricular and co-curricular activities
ii)   To guide student enrolment and registration of the courses
iii)   To authorize the final registration of the courses at the beginning of each semester
iv)   To monitor the academic and general performance of the students including attendance and to counsel them accordingly.
v)   To collect and maintain the academic and co-curricular records of the students.

9   CLASS COMMITTEE

9.1   Every class shall have a class committee consisting of teachers of the class concerned, student representatives and a chairperson who is not handling the class. It is like the 'Quality Circle' (more commonly used in industries) with the overall goal of improving the teaching learning process. The functions of the class committee include:

i)   Solving problems experienced by students in the class room and in the laboratories
ii)   Clarifying the regulations of the programme and the details of rules there in
iii)   Analysing the performance of the students of the class after each test and finding the ways and means of improving the Students Performance

     iv)   Identifying the slow learners, if any, in any specific subject and requesting the teachers concerned to provide some additional help or guidance or coaching to such weak students.

9.2   The class committee for a class under a particular branch is normally constituted by the Head of the Department. However, if the students of different branches are mixed in a class (like the first semester which is generally common to all branches), the class committee is to be constituted by the Head of the Institution.

9.3   The class committee shall be constituted within the first week of each semester.

9.4   At least 4 student representatives (usually 2 boys and 2 girls) shall be included in the class committee, covering all the elective courses.

9.5   The chairperson of the class committee shall invite the mentor(s) and the Head of the Department to the meeting of the class committee. The Head of the Institution may participate in any class committee of the institution.

9.6   The first meeting of the class committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held in a semester at suitable intervals. **The Class Committee Chairperson shall display the cumulative attendance particulars of each student on the Notice Board at the end of every such meeting to enable the students to know their attendance details to satisfy the clause 7 of this Regulation.** During these meetings the student members representing the entire class, shall meaningfully interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.

9.7   The chairperson is required to prepare the minutes of every meeting, submit the same to Head of the Institution within two days of the meeting and arrange to circulate it among the students and teachers concerned.

10   COURSE COMMITTEE FOR COMMON COURSES

Each common theory course offered to more than one discipline or group, shall have a "Course Committee" comprising all the teachers teaching the common course with one among them nominated as Course Coordinator. The nomination of the Course Coordinator shall be made by the Head of the Department / Head of the Institution depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course committee' shall meet in order to arrive at a common scheme of evaluation for the test and shall ensure a uniform evaluation of the tests. Wherever feasible, the course committee may also prepare a common question paper for the internal assessment test(s).

11   ASSESSMENT PROCEDURES FOR AWARDING MARKS

Performance in each course of study shall be evaluated based on (i) Continuous assessments throughout the semester and (ii) End Semester Examination at the end of the semester.

Each course shall be evaluated for a maximum of 100 marks as shown below:

Sl.No.	Category of course	Continuous Assessments	End Semester Examination
1	Theory courses	40 Marks	60 Marks
2	Laboratory Courses	60 Marks	40 Marks
3	Theory courses with Laboratory component / Theory courses with Project component / Laboratory Courses with Project component	50 Marks	50 Marks
4	Project Work	60 Marks	40 Marks
5	All other Employability Enhancement Courses	100 Marks	-

End Semester examinations will be of 3 hours' duration and shall normally be conducted between October and December during the odd semesters and between April and June during the even semesters.

11.1 CONTINUOUS ASSESSMENT FOR THEORY COURSES
Continuous Assessment comprises of two assessments of equal weightage, conducted by the course instructor / coordinator / department. The total marks obtained in the 2 assessments put together shall be reduced to 40 marks and rounded to the nearest integer as shown below.

Assessment I (100 Marks)		Assessment II (100 Marks)		Total Internal Assessment
Individual Assignment / Case Study / Seminar / Project / MCQ etc.,**	Written Test	Individual Assignment / Case Study / Seminar / Project / MCQ etc.,**	Written Test	
40	60	40	60	200*

*200 Marks is to be converted into 40 marks for internal Assessment.

** Continuous assessment component will be decided by the course coordinator who has the liability to go for any mode of continuous assessment suitable to the course. However, the assessment mode should be decided before the commencement of course in the semester as approved by the Head of the department concerned.

In case a student misses the assessment due to medical reasons (hospitalization / accident / specific illness) or due to participation in the College / University / State / National / International level Sports, events with prior permission from the Chairman, Sports Board, only one Reassessment may be given at the end of the semester after getting approval from the Head of the Department through the concerned course instructor.

11.2 CONTINUOUS ASSESSMENT FOR LABORATORY COURSES
Every laboratory exercise / experiment shall be evaluated based on conduct of experiment / exercise and records to be maintained. There shall be one test. The criteria for arriving at the Continuous Assessment marks is as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25

marks for the test. The total marks shall be converted into a maximum of 60 marks and rounded to the nearest integer.

Internal Assessment (100 Marks) *	
Evaluation of Laboratory Observation, Record	Test
75	25

* Internal assessment marks shall be converted into 60 marks

11.3 CONTINUOUS ASSESSMENT FOR THEORY COURSES WITH LABORATORY COMPONENT

There shall be two continuous assessments: the first assessment (maximum mark 100 mark) will be similar to assessment of theory course and the second assessment (maximum mark 100) will be similar to assessment of laboratory course respectively. **The weighted average of these two assessments shall be converted into 50 marks and rounded to the nearest integer.**

Assessment I (100 Marks)		Assessment II (100 Marks)		Total Internal Assessment
Individual Assignment / Case Study / Seminar / Project / MCQ etc.,**	Written Test	Evaluation of Laboratory Observation, Record	Lab Test	
40	60	75	25	200*

*200 Marks is to be converted into 50 marks for internal Assessment.

** Continuous assessment component will be decided by the course coordinator who has the liability to go for any mode of continuous assessment suitable to the course. However, the assessment mode should be decided before the commencement of course in the semester as approved by the Head of the department concerned.

11.4 CONTINUOUS ASSESSMENT FOR THEORY COURSE WITH PROJECT COMPONENT

Continuous Assessment comprises of two assessments of equal weightage, conducted by the course instructor / coordinator / department. The total marks obtained in the 2 assessments put together shall be reduced to 50 marks and rounded to the nearest integer as shown below.

Assessment I (100 Marks)		Assessment II (100 Marks)			Total Internal Assessment
Individual Assignment / Case Study / Seminar / Project / MCQ etc.,**	Written Test	Review I	Review II	Project Report and Viva - Voce	
40	60	15	25	60	200*

*200 Marks is to be converted into 50 marks for internal Assessment.
** Continuous assessment component will be decided by the course coordinator who has the liability to go for any mode of continuous assessment suitable to the course. However, the assessment mode should be decided before the commencement of course in the semester as approved by the Head of the department concerned.

The project can be a group project. The group size should be based on the complexity of the project. Students should make sure that the concepts studied are reflected in the project and there is an innovative component.

11.5 CONTINUOUS ASSESSMENT FOR LABORATORY COURSE WITH PROJECT COMPONENT

Continuous Assessment comprises of two assessments of equal weightage, conducted by the course instructor / coordinator / department. The total marks obtained in the 2 assessments put together shall be reduced to 50 marks and rounded to the nearest integer as shown below.

Assessment I (100 Marks)		Assessment II (100 Marks)			Total Internal Assessment
Evaluation of Laboratory Observation, Record	Lab Test	Review I	Review II	Project Report and Viva - Voce	
75	25	15	25	60	200*

*200 Marks is to be converted into 50 marks for internal Assessment.

The project can be a group project. The group size should be based on the complexity of the project. Students should make sure that the concepts studied are reflected in the project and there is an innovative component.

11.6 ASSESSMENT FOR PROJECT WORK

The student shall register for Project Work-I in pre-final Semester and Project Work-II in final Semester. Project work may be allotted to a single student or to a group of students not exceeding 4 per group. Project Work-II may/may not be continuation of Project Work-I. If Project Work II is not a continuation of Project Work I then the topic and constitution of the project team members need not be the same.

11.6.1 Project work shall be carried out under the supervision of a "qualified teacher" in the Department concerned. In this context "qualified teacher" means the faculty member possessing (i) PG degree or (ii) Ph.D. degree.

11.6.2 The Project Work-II carried out in industry/academic/research institutions need not be a continuation of Project Work I. In such cases, the Project Work shall be jointly supervised by a supervisor of the department and an expert as a joint supervisor from the organization and the student shall be instructed to meet the supervisor periodically and to attend the review committee meetings for evaluating the progress. The review meetings, if necessary, may also be arranged in online mode with prior approval from the Head of the Institution and suitable record of the meetings shall be maintained.

11.6.3 The Head of the Institution shall constitute a review committee for project work for each programme. The review committee consists of supervisor, expert from the Department and a project coordinator from the Department. If the project coordinator/expert member happens to be the Supervisor then an alternate member shall be nominated. In the case of industrial project, the review committee shall have supervisor, coordinator from industry and project coordinator from the Department.

11.6.4 There shall be three reviews during the Semester VII and VIII by a review committee. The student shall make presentation on the progress made by him / her before the committee. The total marks obtained in the three reviews shall be **reduced for 60 marks** and rounded to the nearest integer.

The project report shall carry a **maximum of 20 marks**. The project report shall be submitted as per the approved guidelines as given by Head, Centre for Academic Courses. Same mark shall be awarded to every student within the project group for the project report.

The viva-voce examination shall carry **20 marks**. Marks are awarded to each student of the project group based on the individual performance in the viva-voce examination. Viva-voce Examination during End Semester Examinations is conducted by a committee consisting of one internal examiner and one external examiner. The internal and the external examiner shall be selected from the panel proposed by the BoS and appointed by the Controller of Examination.

The distribution of marks for the internal assessment and End semester examination is given below:

Internal Assessment (60 Marks)			End semester Examinations (40 Marks)			
Review I	Review II	Review III	Project Report		Viva-Voce	
			Supervisor	External	Internal	External
10	20	30	10	10	10	10

11.6.5 The last date for submission of project report is the last working day of the semester. If a student fails to submit the project report on or before the specified deadline or the student has submitted the project report but did not appear for the viva-voce examination, it will be considered as fail in the Project Work and shall re-register for the same in the subsequent semester.

11.7 **ASSESSMENT FOR OTHER EMPLOYABILITY ENHANCEMENT COURSES**

11.7.1 The **Industrial Training / Internship** shall carry 100 marks and shall be evaluated through internal assessment only. At the end of Industrial training / internship, the student shall submit an attendance certificate from the organization where he / she has undergone training and a brief report. The evaluation shall be based on the report (30%), presentation (30%) and response to the questions asked during presentation (40%) by a three-member panel constituted by the Head of the Institution. The certificates submitted by the candidate shall be attached to the mark list sent by the Head of the Department.

11.7.2 **Industry Oriented Courses** shall carry 100 marks and shall be evaluated through continuous assessments only. Two assessments shall be conducted by the department concerned / Industry Experts. Total marks obtained in two assessments shall be reduced to 100 marks and reduced to the nearest integer.

A committee consisting of the Head of the Department, coordinator of the course and a senior faculty member nominated by the Head of the Institution shall monitor the evaluation process.

11.7.3 **Liberal Arts Courses** shall carry 100 marks and shall be evaluated through continuous assessments only. Two assessments shall be conducted by the centre for Liberal Arts Courses. Total marks obtained in two assessments shall be reduced to 100 marks and reduced to the nearest integer.

A committee consisting of the Head of the Department, coordinator of the course and a senior faculty member nominated by the Head of the Institution shall monitor the evaluation process.

11.7.4 **Value Added Courses** shall carry 100 marks and shall be evaluated through continuous assessment only. Two assessments shall be conducted by the department concerned. Total marks obtained in two assessments shall be reduced to 100 marks and reduced to the nearest integer.

A committee consisting of the Head of the Department, staff handling the course and a senior faculty member nominated by the Head of the Institution shall monitor the evaluation process. The list of students along with the marks and the grades earned shall be forwarded to the Controller of Examinations for appropriate action. The credits earned by the students for value added courses will be recorded in the grade sheet, however the same shall not be considered for the computation of GPA/CGPA.

11.8 **ASSESSMENT FOR ONLINE COURSES**
The online courses shall be chosen from the SWAYAM platform / MOOC courses with proctored examination. The credits earned shall be transferred and the marks earned shall be converted into grades and transferred, provided the organization offering the course conducts regular examination and the student has passed in the examination as per the norms of the offering organisation. The details regarding online courses taken up by student and marks/credits earned should be sent to the Controller of Examinations, in the subsequent semester(s) along with the details of the professional elective course to be dropped.

11.9 **ADDITIONAL LEARNING**
In order to make student learning capabilities more meaningful and activity oriented, the students during their period of study in the college are encouraged to participate in high rated technical competitions like Hack-a-thons conducted by leading organization / Industries and premier institutions. In order to integrate this in academics, additional marks can be awarded to the students if he / she wins the competitions, after due approval from Head of the Institution. The student can benefit through such additional marks, to a maximum of 10, which can be added to the continuous assessments marks scored for one/two courses in each semester.

11.10 **Internal marks approved by the Head of the Institution shall be displayed by the respective HoDs within 5 days from the last working day.**

11.11 **Attendance and Assessment Record**
Every teacher is required to maintain an 'Attendance and Assessment Record' which consists of attendance marked in each lecture or practical or project work class, the test marks and the record of class work (topic covered), separately for each course. This should be submitted to the Head of the department periodically (at least three times in a semester) for checking the syllabus coverage and the records of test marks and attendance. The Head of the Department will authenticate after due verification. At the end of the semester, the record should be verified by the Head of the Institution. Department concerned will maintain this document for five years.

11.12 **Conduct of Academic Audit**
Academic Audit is to be done for every course taught during the semester. For the internal assessments conducted for each course as per details provided in Clause 11, the academic records shall be maintained in the form of documentation for the individual assignments / case study report / report of project submitted by each student and assessment test question paper and answer script. Report of industrial training / internship shall also be maintained. For laboratory courses students' record shall be maintained. Head of the Institution shall arrange to conduct the Academic Audit for every course in a semester by forming the respective committees with an external course expert as one of the members, drawn from a technical institution of repute near the institute.

12   REQUIREMENTS FOR APPEARING FOR END SEMESTER EXAMINATIONS

12.1   A student shall normally be permitted to appear for the End Semester Examinations for all the courses registered in the current semester (vide clause 6) if he/she has satisfied the semester completion requirements (as per Clause 7).

Further, examination registration by a student is mandatory for all the courses in the current semester and all arrear(s) course(s) for the end semester examinations failing which, the student will not be permitted to move to the higher semester.

A student who has already appeared for any course in a semester and passed the examination is not entitled to reappear in the same subject for improvement of grades.

12.2   When a student is deputed for a National / International sports event or NCC camp during end semester examination period, special examinations shall be conducted within a reasonable period for such student after returning from the event or camp. Such an appearance shall be considered as first appearance.

13   PASSING REQUIREMENTS

13.1   A student who secures not less than 50% of total marks prescribed for the course [Internal Assessment + End Semester Examinations] with a minimum of 45% of the marks prescribed for the End Semester Examination, shall be declared to have passed the course and acquired the relevant number of credits. This is applicable for both theory and practical courses (including project work).

13.2   If a student fails to secure a pass in a theory course / laboratory course (except electives), the student shall register and appear only for the end semester examination in the subsequent semester. In such case, the internal assessment marks obtained by the student in the regular appearance (Regular Registration) shall be retained and considered valid for first arrear appearance only as per clause 13.1. However, from the second arrear appearance onwards, the student shall be declared to have passed the examination if he/she secures a minimum of 50% marks prescribed for the end semester examinations alone.

13.3   If the course, in which the student has failed, is a professional elective or an open elective, the student may be permitted to complete the same course**.** In such case, the internal assessment marks obtained by the student in the regular appearance (Regular Registration) shall be retained and considered valid for first arrear appearance only as per clause 13.1. However, from the second arrear appearance onwards, the student shall be declared to have passed the examination if he/she secures a minimum of 50% marks prescribed for the end semester examinations alone.

If any other professional elective or open elective course is opted by the student, the previous registration is cancelled and henceforth it is to be considered as a new professional elective or open elective course. The student has to register and attend the classes, earn the continuous assessment marks, fulfil the attendance requirements as per Clause 7 and appear for the end semester examination.

13.4   If a student is absent during the viva - voce examination, it would be considered as fail. If a student fails to secure a pass in Project work , the student shall register for the course again.

13.5 The passing requirement for the courses which are assessed only through purely internal assessments (EEC courses except project work and laboratory), is 50% of the internal assessment (continuous assessment) marks only.

13.6 **Examination Wrapper and Revaluation:** One week after the publication of results, there shall be an examination wrapper day for the theory courses. On this day, the students can go through their end semester answer papers in the presence of the course instructors and Head of the department and get clarifications.

In cases of dispute, when the student is not satisfied with the clarifications/corrections, the student can apply for revaluation. There will not be any further reviews. Revaluation is not permitted to the courses other than theory courses. A student can apply for revaluation of answer scripts for not exceeding 5 subjects at a time.

14 AWARD OF LETTER GRADES

14.1 The award of letter grades will be decided using relative grading principle. The relative grading is applicable to only those who have passes the examinations as per the passing requirements. For those students who have not passed the examinations, Reappearance (RA) shall be awarded as shown in the table below. The performance of a student will be reported using letter grades, each carrying certain points as detailed below:

Letter Grade	Grade Points	Marks Range#
O (Outstanding)	10	91 – 100
A+ (Excellent)	9	81 – 90
A (Very Good)	8	71 – 80
B+ (Good)	7	61 – 70
B (Average)	6	56 – 60
C (Satisfactory)	5	50 – 55
RA	0	<50
SA (Short of Attendance)	0	
W	0	

#For a given course, if the students' strength is greater than 30, the relative grading method shall be adopted. However, if the students' strength is less than 30 the absolute grading shall be followed with the grade range as specified in this column.

For Laboratory courses and Project work absolute grading method is to be followed.

A student is deemed to have passed and acquired the corresponding credits in a particular course if he/she obtains any one of the following grades: **"O", "A+", "A", "B+","B", "C".**

'SA' denotes shortage of attendance (as per clause 7.3) and hence prevention from writing the end semester examinations. 'SA' will appear only in the result sheet.

"RA" denotes that the student has failed to pass in that course. "**W**" denotes **withdrawal** from the exam for the particular course. The grades RA and W will figure both in Grade Sheet as well as in Result Sheet. In both cases, the student has to appear for the End Semester Examinations as per the regulations.

If the grade RA is given to **Theory courses/ Laboratory Courses it is not required to satisfy the** attendance requirements (vide clause 7) but has to appear for the end semester examination and fulfil the norms specified in Clause 13 to earn a pass in the respective courses.

If the grade RA is given to **EEC course (except project work), which are evaluated only through internal assessment,** the student shall register for the course again in the subsequent semester, fulfil the norms as specified in Clause 13 to earn pass in the course. However, attendance requirement need not be satisfied.

If the grade RA is given to a Project work **course**, then the course is to be registered again and the attendance requirements (vide clause 7) should be satisfied.

14.2   For the Co-curricular activities such as National Cadet Corps (NCC)/ National Service Scheme (NSS) / SPORTS & GAMES / YRC / Technical Clubs / Cultural Clubs, a 'completed' remark will appear in the Grade Sheet on successful completion of the same. Every student shall put in a minimum of 75% attendance in the training and attend the camp or events of the clubs compulsorily. The training and camp or club events shall be completed during the first year of the programme. However, for valid reasons, the Head of the Institution may permit a student to complete this requirement in the subsequent years.

   Successful completion of any one of the above co-curricular activities is compulsory for the award of degree.

14.3   The grades O, A+, A, B+, B and C obtained for value added courses, Industry Oriented Courses, Liberal Arts Courses and Online courses shall figure in the grade sheets. The other grades are RA and SA will not figure in the grade sheet for such a course.

14.4   After results are declared, Grade Sheets will be issued to each student which will contain the following details:
   (a)   The list of courses registered during the semester and the grade scored.
   (b)   The Grade Point Average (GPA) for the semester
   (c)   The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

GPA for a semester is the ratio of the sum of the products of the number of credits for courses acquired and the corresponding points to the sum of the number of credits for the courses acquired in the semester.

CGPA will be calculated in a similar manner, considering all the courses registered from first semester. RA grades will be excluded for calculating GPA and CGPA.

$$\text{GPA / CGPA} = \frac{\sum_{i=1}^{n} C_i\, GP_i}{\sum_{i=1}^{n} C_i}$$

where
Ci is the number of Credits assigned to the course
GPi is the point corresponding to the grade obtained for each course
n is number of all courses successfully cleared during the particular semester in the case of GPA and during all the semesters in the case of CGPA.

15   **ELIGIBILITY FOR THE AWARD OF THE DEGREE**

15.1   A student shall be declared to be eligible for the award of the B.E. / B.Tech. Degree provided the student has

    i)   Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time.
    ii)   Successfully completed the course requirements, appeared for the End-Semester examinations and passed all the subjects within the period as prescribed in Clause 5.1.
    iii)   Successfully passed any additional courses prescribed by the Board of studies / Academic council whenever the student is readmitted under regulations R-2021.
    iv)   Successfully completed the NCC / NSS / UBA / SPORTS & GAMES / YRC / Technical Clubs / Cultural Clubs requirements.
    v)   Successfully completed the Non-Mandatory Courses.
    vi)   No disciplinary action pending against the student.
    vii)   The award of Degree must have been approved by the Syndicate of the University.

15.2   **CLASSIFICATION OF THE DEGREE AWARDED**

15.2.1 **FIRST CLASS WITH DISTINCTION**
A student who satisfies the following conditions shall be declared to have passed the examination in First class with Distinction:

    i)   Should have passed the examination in all the courses of all the eight semesters (6 semesters in the case of Lateral Entry) in the student's First Appearance within **five** years (Four years in the case of Lateral Entry). Withdrawal from examination (vide Clause 16) will not be considered as an appearance.
    ii)   Should have secured a CGPA of not less than **8.50**.
    iii)   One-year authorized break of study (if availed of) is included in the five years (Four years in the case of lateral entry) for award of First class with Distinction.
    iv)   Should NOT have been prevented from writing end semester examination due to lack of attendance in any semester.

15.2.2 **FIRST CLASS**
A student who satisfies the following conditions shall be declared to have passed the examination in **First class**:

    i)   Should have passed the examination in all the courses of all eight semesters (6 semesters in the case of Lateral Entry) **within five years**. Four years in the case of Lateral Entry.
    ii)   One year authorized break of study (if availed of) or prevention from writing the End Semester examination due to lack of attendance (if applicable) is included in the duration of five years and four years in the case of lateral entry for award of First class
    iii)   Should have secured a CGPA of not less than **6.50.**

15.2.3 **SECOND CLASS**
All other students (not covered in clauses 15.2.1 and 15.2.2) who qualify for the award of the degree **(**vide Clause 15.1) shall be declared to have passed the examination in **Second Class**.

15.2.4 **HONOURS AND MINOR DEGREE**
A candidate who qualifies for the award of the degree (vide clause 15.1) and who satisfies the following conditions shall be declared to have earned the B.E. / B. Tech. (Hons) Specialisation in the same discipline, B.E. / B. Tech. (Hons) and B.E. / B. Tech. minor in other specialisation.

i)   B.E. / B. Tech. Honours (Specialization in the same discipline)
- The student should have earned additionally a minimum of 18 credits from a vertical of the same programme
- Should have passed all the courses in the first attempt
- Should have earned a minimum CGPA of 7.50

ii)   B.E. / B. Tech. Honours
- The student should have earned additional courses (minimum of 18 credits) from more than one vertical of the same programme
- Should have passed all the courses in the first attempt
- Should have earned a minimum CGPA of 7.50

iii)   B.E. / B. Tech. (Minor in the Specialization)
The student should have earned additionally a minimum of 18 credits in any one of the verticals of other B.E / B. Tech Programmes or from any one of the following verticals.

All Programmes:
Vertical I   : Fintech and Block Chain
Vertical II   : Innovation, Entrepreneurship and Venture Development
Vertical III   : Politics and Public Administration
Vertical IV   : Business Data Analytics
Vertical V   : Environment and Sustainability
Vertical VI   : Economics
Vertical VII : Mathematics and statistics for Data Science and Modelling

Vertical VIII: Industrial IoT – All Programmes except EC
Vertical IX : Image Processing Techniques - All Programmes except EC
Vertical X : AI for Embedded systems – All Programmes except EE
Vertical XI : Applied Machine Learning - CE, ME, EE, EC, BM, CH, MI
Vertical XII: Software Development Engineering – CE, ME, EE, EC, BM, CH, MI

Students can earn maximum of 6 credits in online mode, out of these 18 credits as approved by Centre for Academic Courses.

B.E. / B. Tech. (Hons) Specialisation in the same discipline, B.E. / B. Tech. (Hons) and B.E. / B. Tech. minor in other specialisation degree will be optional for students.

For the category B.E. / B. Tech. Honours (Specialization in the same discipline) and B.E. / B. Tech. Honours, the students will be permitted to register the courses from 3rd semester onwards provided the students continue to maintain a CGPA of 7.50 and above throughout their course of study and clear all the courses in the first attempt.

For the category B.E. / B. Tech. (Minor in other specialization), the students will be permitted to register the courses from 3rd semester onwards provided students continue to maintain a CGPA of 7.50 and above throughout their course of study.

If a student decides not to opt for Honours, after completing certain number of additional courses, the additional courses studied shall be considered instead of the Professional Elective courses which are part of the curriculum. If the student has studied a greater number of such courses than the number of Professional Elective courses required as per the curriculum, the courses with higher grades shall be considered for the calculation of CGPA. Remaining courses shall be printed in the mark sheet; however, they will not be considered for calculation of CGPA.
If a student decides not to opt for Minor, after completing certain number of courses, the additional courses studied shall be considered instead of Open Elective courses which are part of the curriculum. If the student has studied a greater number of such courses

than the number of open electives required as per the curriculum, the courses with higher grades shall be considered for calculation of CGPA. Remaining courses shall be printed in the mark sheet; however, they will not be considered for calculation of CGPA.

Student earned additional 18 credits as per Clause 15.2.4 (i) and 15.2.4 (ii) but does not satisfy the conditions mentioned in 15.2.1 or 15.2.2 shall not be awarded B.E. /B.Tech. Honours. In such cases the mark sheet will show the additional courses studied and those courses shall not be considered for CGPA computation. In such case if the student becomes eligible for First Class, while computing CGPA without considering the additional course studied, the student shall be awarded B.E. / B.Tech. in First Class only.

15.4 A student who is absent in end semester examination in a course / project work after having registered for the same shall be considered to have appeared in that examination for the purpose of classification. (Subject to clause 16 and 17)

16 PROVISION FOR WITHDRAWAL FROM END-SEMESTER EXAMINATION

16.1 A student may, for valid reasons, (medically unfit / unexpected family situations / sports approved by Chairman, sports board and HoD) be granted permission to withdraw from appearing for the end semester examination in any course or courses in **ANY ONE** of the semester examinations during the entire duration of the degree programme. The application shall be sent to COE through the Head of the Institutions with required documents.

16.2 Withdrawal application is valid if the student is otherwise eligible to write the examination (Clause 7) and if it is made within TEN days after the date of the examination(s) in that course or courses and recommended by the Head of the Department and approved by the Head of the Institution. For a student to withdraw from a course / courses, he/she should have registered for the course, fulfilled the attendance requirements (vide clause 7) and earned continuous assessment marks.

16.2.1 Notwithstanding the requirement of mandatory 10 days, applications for withdrawal for special cases under extraordinary conditions will be considered on the merit of the case.

16.3 In case of withdrawal from a course / courses, the courses will figure both in Grade Sheet as well as in Result Sheet. However, withdrawal shall not be considered as an appearance for the eligibility of a student for First Class with Distinction.

16.4 If a student withdraws a course or courses from writing end semester examinations, he/she shall register the same in the subsequent semester and write the end semester examination(s).

16.5 If a student applies for withdrawal from Project work, he/she will be permitted for the withdrawal only after the submission of project report before the deadline. However, the student may appear for the viva voce examination within 60 days after the declaration of results for Project Work and the same shall not be considered as reappearance.

16.6 Withdrawal is permitted for the end semester examinations in the final semester, as per clause15.2.1.

17 PROVISION FOR AUTHORISED BREAK OF STUDY

17.1 A student is permitted to go on authorised break of study for a maximum period of one year as a single spell.

17.2 Break of Study shall be granted only once for valid reasons for a maximum of one year during the entire period of study of the degree programme. However, in extraordinary situation the student may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a student intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to re-join the programme in a subsequent year, permission may be granted based on the merits of the case provided he / she applies to the Head of the Institution in advance, but not later than the last date for registering for the end semester examination of the semester in question, through the Head of the Department stating the reasons therefore and the probable date of rejoining the programme.

17.3 The student permitted to re-join the programme after break of study / prevention due to lack of attendance, shall be governed by the Curriculum and Regulations in force at the time of rejoining. The students re-joining in new regulations shall register for additional courses, if any, as notified by the Centre for Academic Courses under change of regulations. These courses may be from any of the semesters of the curriculum in force, so as to bridge the curriculum in force and the old curriculum.

17.4 The authorized break of study is included in the duration specified for passing all the courses for the purpose of classification (vide Clause 15.2).

17.5 The total period for completion of the Programme reckoned from, the commencement of the first semester to which the candidate was admitted shall not exceed the maximum period specified in clause 5.1 irrespective of the period of break of study in order that he/she may be eligible for the award of the degree.

17.6 If any student is prevented for want of required attendance, the period of prevention shall not be considered as authorized 'Break of Study' (Clause 17.1).

17.7 If a student wants to take up job / start-up / entrepreneurship during the period of study he/she shall apply for authorised break of study for one year. The student shall join the job / start-up / entrepreneurship only after getting approval of the same by the Head of the Institution with due proof to that effect.

17.8 No fee is applicable to students during the Break of Study period.

18 DISCIPLINE

18.1 Every student is expected to follow the rules and regulations laid down by the Institute and the affiliating University, as published from time to time. Any violations, if any, shall be treated as per the procedures stated thereof.

18.2 If a student indulges in malpractice in any of the End Semester / Continuous Assessments, he / she shall be liable for punitive action as prescribed by the Institution / University from time to time.

19   REVISION OF REGULATIONS, CURRICULUM AND SYLLABI

The Institution reserves the right to revise/amend/change the Regulations, Curriculum, Syllabi, Scheme of Examinations, and date of implementation through the Academic Council, and to introduce additional Electives and One Credit Courses through the respective Boards of Studies.

The following revisions were made to the Regulations 2021 based on the 9th and 10th Academic Council Meetings:
Insertion of New Clause 4.9
Insertion of New Clause 4.10
Insertion of New Clause 4.12
Amendment of Clause 11
Amendment of Clause 11.6.4
Amendment of Clause 12 and Insertion of Clause 12.2
Amendment of Clause 15.2.4