FRANCIS XAVIER ENGINEERING COLLEGE

AUTONOMOUS INSTITUTION

ACCREDITED BY NBA

ISO 9001:2015 Certified | DST-FIST Supported Institution

Recognized under Section 2(f) & 12(B) of the UGC Act, 1956

Vannarpettai, Tirunelveli - 627003, Tamil Nadu

REGULATIONS - 2019

CHOICE BASED CREDIT SYSTEM

UNDER GRADUATE DEGREE PROGRAMMES

COMMON TO ALL B.E./B.TECH. PROGRAMMES

(For Students admitted to the B.E./B.Tech. Programme under Autonomous from 2019-2020 onwards)

VISION

To provide education in Engineering with excellence and ethics and to reach the unreached.

MISSION

To create innovative and vibrant young leaders and entrepreneurs in Engineering and Technology for building India as a super knowledge power and blossom into a University of excellence recognized globally.

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REGULATIONS 2019

CHOICE BASED CREDIT SYSTEM

Common to all B.E. /B.Tech. Full-Time Programmes

(For the Students admitted to B.E./B.Tech. Programme from 2019-2020 onwards)

DEGREE OF BACHELOR OF ENGINEERING/BACHELOR OF TECHNOLOGY

This Regulation is applicable to the students admitted to B.E./B.Tech. Programme from the Academic Year 2019-2020 onwards.

1. PRELIMINARY DEFINITIONS AND NOMENCLATURE

In this regulation, unless the context otherwise requires:

i. **"Degree"** means the academic award conferred upon a student on successful completion of a four-year programme deliberate to achieve the defined attributes. It is referred to as Under-Graduate (UG) Degree that is "Bachelor of Engineering (B.E.) / Bachelor of Technology" (B.Tech.)

ii. "**Programme"** means cohesive arrangement of courses, co-curricular and extracurricular activities to accomplish predetermined objectives leading to the awarding of a degree. It also means branch or discipline of B.E.,/B.Tech. Degree programme like Civil Engineering, Mechanical Engineering, etc.

iii. **"Discipline"** means Branch or Specialization in B.E./B.Tech. Degree Programme, viz., Civil Engineering, Information Technology etc.

iv. **"Course"** means an arrangement of theory, tutorials and practice sessions of a subject studied in a semester like Mathematics, Physics, Chemistry, Python Programming, Engineering Mechanics etc.,

v. **"Head of the Institution"** means the Principal of the Institution.

vi. **"Controller of Examinations"** means the authority of the Autonomous Institute who is responsible for all activities of the Examinations.

vii. **"Dean Academics"** means the authority of the Autonomous Institution who is responsible for all academic activities of the Institute/Departments for implementation of relevant Rules and Regulations.

viii. **"Chairman, BoS"** means Chairman, Board of Studies of each faculty.

ix. **"Head of the Department"** means Head of the Department concerned.

x. **"Credit"** means a numerical value allotted for each course.

xi. **"Grade"** means the letter grade assigned to each course based on the range of marks specified.

xii. **"Grade Point"** means a numerical value (0 to 10) allotted based on the grade assigned to each course.

xiii. **"LES"** means Lateral Entry Scheme.

xiv. **"CBCS"** means Choice Based Credit System.

xv. **"L – T – P –C"** refers to Lecture, Tutorial, Practical and Credits respectively

xvi. **"Curriculum"** refers to the various components / courses studied in each programme that provide appropriate outcomes (Knowledge, Skills and Attitude/ Behaviour) in the chosen branch of study.

xvii. **"Humanities and Social Sciences"** (HSS) Courses include English, Professional Ethics and Human Values and Communication skills etc.,

xviii. **"Basic Sciences"** (BS) Courses include Mathematics, Physics, Chemistry, Biology, etc.

xix. **"Engineering Sciences"** (ES) Courses include Engineering Practices, Engineering Graphics, Basics of Electrical / Electronics / Mechanical / Computer Engineering, Instrumentation etc.

xx. **"Professional Core"** (PC) Courses include the core courses relevant to the chosen specialization / branch.

xxi. **"Professional Elective"** (PE) Courses include the elective courses relevant to the chosen specialization/ Programme

xxii. **"Open Electives**" (OE) Courses include the courses which a student can choose from the curriculum of other B.E./B. Tech. programmes. These courses may be offered by Internal/External experts.

xxiii. **"Project Work"** (PW) refers to the Capstone project done by a student or a group of students during the final year.

xxiv. **"Value Added Courses"** (**VAC**) means a course that will be offered by the department, which could be selected by any student in the college

xxv. **"Industry Supported Course"** (**ISC**) means a course offered by experts from industry/ research organizations and approved by Academic Consultative Committee.

xxvi. "**Guided Study Course**" **(GSC)** is an option given to the higher CGPA student to undergo one programme specific elective chosen after the second year with the guidance of an allotted faculty.

xxvii. **"Academic Consultative Committee" (ACC)** The committee includes Principal, Dean Academics, CoE, HoD concerned.

xxviii. **"Department Consultative Committee"**(DCC) The committee includes HoD, Senior faculty member(s) of department, faculty, Mentor of the students

xxix. **"University"** means Anna University, Chennai.

2. ADMISSION PROCEDURE

2.1 First Year – Regular Admission

The minimum eligibility for admission to **I Year** B.E./B.Tech. Degree Programmes (Regular) shall be based on the following two essential criteria:

(a) The Higher Secondary Examination of **(10+2) Curriculum** (Regular Academic Stream) prescribed by the Government of Tamil Nadu with Mathematics, Physics and Chemistry as three of the four subjects of the study (prescribed under part-III) or any other examinations of any other University or authority accepted by the University/Directorate of Technical Education as equivalent thereto.

(OR)

(b) 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

(a) 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. in the branch corresponding to the branch of study or in the eligible branch of study.

(OR)

(b) 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 additional Engineering subject**(s) in the **third and fourth semesters** as prescribed by the College.

2.3 Minimum Eligibility

The eligibility criteria such as marks, number of attempts and physical fitness shall be as prescribed by the University/ DOTE from time to time.

3. PROGRAMMES OFFERED

B.E. Degree Programmes

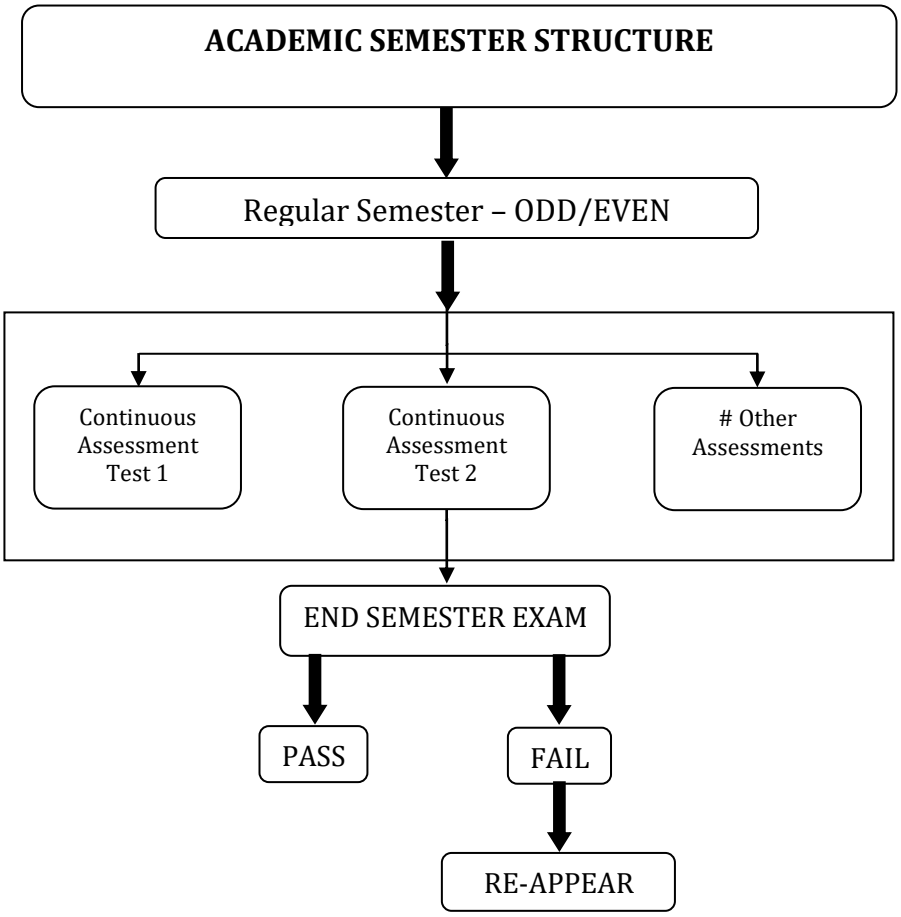
- Civil Engineering
- Computer Science and Engineering
- Electronics and Communication Engineering
- Electrical and Electronics Engineering
- Mechanical Engineering

B.Tech. Degree Programme

- Information Technology

4. ACADEMIC STRUCTURE

Every B.E./ B. Tech. Programme will have a curriculum with syllabi consisting of Theory, Theory and Practical courses. A 4 year (8 Semesters) B.E./B.Tech degree programme affiliated to Anna University, Chennai, under Choice Based Credit System (CBCS) for regular students and 3 year (6 semesters) B.E/B.Tech degree programme for lateral-entry students in the branches of Engineering and Technology vide clause 3.



Open book test, Cooperative learning report, Assignment; Journal paper review, Group Presentation, Project report, Poster preparation, Prototype or Product Demonstration etc (as applicable). Two assessments, for 25 marks each may be conducted periodically, spread out through the semester and reflected in the course plan.

Figure : 1 Academic Semester Structure

4.1 MEDIUM OF INSTRUCTION

The medium of instruction, examinations and project reports shall be in English.

4.2 CATEGORIZATION OF COURSES

4.2.1 The Curriculum and Syllabi under Regulations 2019 is designed keeping in mind the Outcome Based Education (OBE) and Choice Based Credit

System (CBCS). The course content of each course shall be fixed in accordance with the Program Educational Objectives (PEOs), Program Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes (COs).

4.2.2 The CBCS enables the students to earn credits across Programmes and provides flexibility in registering the required number of credits in a semester. The CBCS facilitates transfer of credits earned in different departments / Centers of other recognized / accredited universities or institutions of higher education in India and abroad either by studying directly or by online method.

4.2.3 The Curriculum of every **REGULAR PROGRAMME** is designed with total number of credits ranging **from 160 to 165.** Each programme shall have a curriculum comprising of Theory, Theory-cum-practical, Practical courses, and Project work with well defined Program Outcomes and Programme Educational Objectives (PEO) as per Outcome Based Education (OBE). The content of each course is designed based on the Course Outcomes (CO).

4.2.4 The curriculum of every **LATERAL PROGRAMME** is designed with total number of credits ranging **from 120 to 125.** Each programme shall have a curriculum comprising of Theory, Theory-cum-practical, Practical and Project work courses with well defined Program Outcomes and Programme Educational Objectives (PEO) as per Outcome Based Education (OBE). The content of each course is designed based on the Course Outcomes (CO).

4.2.5 The courses of a programme are categorized as follows:

- **A.** Foundation Courses
    a. Humanities and Social Science (HSS)
    b. Basic Science (BS)
    c. Engineering Science (ES)
- **B.** Professional Core courses relevant to the chosen programme of study.
- **C.** Professional Elective Courses
    a. Programme Specific Elective – Courses offered by respective departments
    b. Programme Specific Elective for Expandable Scope
        i. Courses offered by the Respective Department
        ii. Courses offered by other Departments
        iii. Industry Supported Courses
        iv. Online Courses
- **D.** Employability Enhancement Courses
    i. Project
    ii. Technical Seminar
    iii. Internship in Industry or at Higher learning institutions.
- **E.** Mandatory Courses

The recommended distribution of credits for each category is given below.

Table 1 : Credit Distribution

S. No	Category	Credits (Regular)	Credits (Lateral)
A.	**Foundation Courses (FC)**	53 - 58	13 - 18
	Humanities and Social Science (HSS)	9 - 11	6 - 8
	Basic Science (BS)	21	3 – 8
	Engineering Science (ES)	23 – 26	4 – 7
B.	**Professional Core Courses (PC)**	59	59
C.	**Elective Courses (EC)**	36 – 42	36 – 42
	Programme Specific Elective	24 – 27	24 – 27
	Programme Specific Elective for Expandable Scope	12 – 15	12 – 15
D.	**Employability Enhancement Course(EEC)** Project, Technical Seminar, Internship in industry or at Higher Learning institutions	12-15	12-15
E.	Mandatory Courses	-	-
F.	Minimum Credits to be earned for the award of the Degree	160 -165 (A to D) and the successful completion of Mandatory Courses	120 – 125 (A to D) and the successful completion of Mandatory Courses

*** Minor variations may be permitted in the credit distribution of courses**

4.3 CREDIT ASSIGNMENT

Each course is assigned certain number of credits based on Tables 2 and 3.

Table 2 : Credit Assignment

Contact period per week (of 50 minutes Duration)	**CREDITS**
1 Lecture Period	1
1 Tutorial Period	1
2 Practical Periods (Laboratory / Project Work / etc.)	1

Table 3 : Credit Mapping

Type of Course	**Lectures (Periods/ week)**	**Tutorials (Periods/ week)**	**Practical work (Periods/ week)**	**Credits (L:T:P)**	**Total Credits**	**Total (Periods/ week)**
1 Credit	1	0	0	1:0:0	1	1
	0	0	2	0:0:2	1	2
2 Credits	2	0	0	2:0:0	2	2
	1	0	2	1:0:1	2	3
3 Credits	3	0	0	3:0:0	3	3
	2	1	0	2:1:0	3	3
	2	0	2	2:0:1	3	4
	0	0	6	0:0:3	3	6
4 Credits	2	1	2	2:2:2	4	5
	3	1	0	3:2:0	4	4
	3	0	2	3:0:1	4	5

4.4 COURSE NUMBERING SCHEME

Each course is denoted by a unique code consisting of 8 alphanumeric characters. The details of the numbering scheme are in **Annexure-I**

4.5 NUMBER OF COURSES PER SEMESTER

Curriculum of semester shall normally have a blend of theory / theory cum practical and laboratory courses/ Employability Enhancement Courses in which

a semester shall have maximum of 7 and the total maximum count per semester will be 12.

4.6 INDUSTRY SUPPORTED COURSES

Students can opt for one three credits course offered by experts from industry/ research organizations and approved by Academic Consultative Committee. Students can register such courses from his/her **third year of study** as and when these courses are conducted by different departments. A **student is also permitted to register for these courses of other departments**, provided the student has fulfilled the necessary pre-requisites of the course being offered and subject to the **approval of both the heads of departments**. These courses are evaluated by the respective course coordinator of the programme. A Programme Specific Elective of three credits can be replaced by one three credits industry supported course opted by the student. The maximum number of credits that can be earned from **industry supported courses is limited to 3.**

4.7 INDUSTRIAL TRAINING/INTERNSHIP

4.7.1 The students may **undergo Industrial Training** for a period as specified in the curriculum during summer / winter vacation. The number of credits shall be assigned as detailed in **Table 4.** The details are in **Annexure-III**

Table 4 : Duration of Industrial Training / Internship

Duration of Industrial Training / Internship	Credits
2 Weeks	1
4 Weeks	2
6 Weeks	3
8 or more Weeks	4

4.7.2 The students **may undergo Internship at any research organization/ University/Industry** for the period prescribed in the curriculum. The number of credits shall be assigned as detailed in **Table : 4.**

4.7.3 Every student is expected to undergo In-plant training in any Industry/ organization during the programme of study. **Every 2 weeks of Internship/Training at industry is equivalent to 1 credit.** The credit will be awarded to the student after the submission of **internship / training report** to the Head of the Department. The report will be evaluated by a team of faculty members nominated by the Head of the Department for awarding the grade. Based on the recommendation by the team, the student will be awarded credits and the results will be sent to the Controller of Examinations after the approval by the Head of the Department. The students may **undergo Industrial Training** for a period as specified in the curriculum during summer / winter vacation. The final

semester project period at Industry / Research organization will not be considered as industrial training / internship. **The maximum number of credits that can be earned from Industrial Training / Internship is limited to 4.**

4.7.4 If Industrial Training/ Internship is not prescribed in the curriculum, the student may undergo Industrial Training/ Internship optionally and the credits earned will be indicated in the Mark Sheet.

4.8 ONLINE COURSES

Students can opt one/two online courses (provided with certificate) with the approval of the Departmental Consultative Committee and the Academic Consultative Committee. In case of credits earned through online mode from the Authority approved by the Institution, the credits (and equivalent grades) may be transferred after due approval procedures from the Departmental Consultative Committee.

Courses offered under the Global Initiative of Academic Networks (GIAN) program of MHRD, NPTEL, Swayam online courses etc., can be considered instead of electives. A student can be permitted to do a maximum of two online courses in the entire course of study. The online courses can be considered instead of elective courses. If the student has failed in a chosen online course, the student may register for the same or any other online Course in the subsequent semesters. **The maximum number of credits that can be earned from online courses is limited to 6.**

4.9 GUIDED STUDY COURSE

A student, who **does not have history of arrear in the programme** and **CGPA greater than 8.0**, can study ONE course under Programme Specific Elective category after his/her Second year of study, as a guided study course. **The** Course opted by the student has to be a Programme Specific Elective that is not offered in that semester. One faculty member approved by the Head of the Department shall be responsible for the periodic monitoring and evaluation of the course. The student does not need to attend the classes. However, the student has to submit assignments to the respective faculty-in-charge assigned by the Head of the Department, appear for continuous assessment tests, and end semester examination to earn the appropriate credit.

4.10 LIVE-IN-LAB

4.10.1 It is an experienced learning programmes for the students to recognize the problems of the population living in villages and to identify projects to address the technical related problems, develop solutions, put into practice, assess results and ultimately reveal multidisciplinary innovative solutions for betterment of rural people and rural economy. The interested students shall go to the village adopted by the institution **from third year onwards** and they have to visit at least for two weeks continuously in that village. **Every 2 weeks of Live – in – Lab learning**

programme is equivalent to 1 credit. During the visit, they can interact with village population and identify the technical problem. Further, they have to provide a solution to the problems identified at the end of period of study to consider the same as Internship. The credit will be awarded to the student after the submission of Internship report to the Head of the Department. The report will be evaluated by a team of faculty members nominated by the Head of the Department for awarding the grade. Based on the recommendation by the team, the student will be awarded credits and the results will be sent to the Controller of Examinations after the approval by the Head of the Department. The students may undergo Industrial Training for a period as specified in the curriculum during summer / winter vacation.

4.10.2 The Principal and Head of the Department should ensure that all the necessary arrangements are made in this regard.

4.11 MANDATORY NON CGPA COURSES

In addition, the students shall enroll, in any one of the mandatory non CGPA courses in each category(Personality Development and Allied Skills Courses) listed in **Table : 5** for the award of the degree. The details for assessing these activities are given in **Annexure - II**.

Table 5 : Category of Mandatory Non CGPA Courses

Category	Code	Courses
Personality Development Courses(PD)	19NC0M01	National Service Scheme
	19NC0M02	National Sports Organization
	19NC0M03	Youth Red Cross
	19NC0M04	Yoga for Empowerment
Allied Skills Courses(AS)	19NC0M05	Aptitude Proficiency Certification
	19NC0M06	Creative Thinking & Innovations
	19NC0M07	English Proficiency Certification
	19NC0M08	Foreign / Vernacular Languages
	19NC0M09	Globally accepted Certification Courses
	19NC0M10	Soft Skills

4.12 VALUE ADDED COURSES

Students may optionally undergo Value Added Courses 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 with the prior approval from

the Academic Consultative Committee. The details of the syllabus, time table and faculty in charge details may be sent to the Dean Academics after approval from the Departmental Consultative Committee concerned. Students can take a maximum of four one credit courses and two two credit courses in the entire programme of study. They shall be allowed to take one/two credit courses offered in other Departments with the permission of the Head of the Department offering the course.

4.13 MANDATORY TWO WEEK INDUCTION PROGRAMME

The students are expected to undergo a **Mandatory Two-Week Induction Programme** comprising of Physical activity, Creative Arts, Universal Human Values, Proficiency Modules, Lectures by Eminent People, Visits to Local Areas and Familiarization to Department/Branch & Innovations immediately after admission as stipulated by AICTE.

4.14 INDUSTRIAL VISIT

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

5. DURATION OF THE PROGRAMMES

5.1 The minimum and maximum periods for completion of the UG programmes are given below.

Table 6 : Duration of the Programme

Programme	Minimum No. of Semesters	Maximum No. of Semesters
B.E. / B.Tech.	8	14
B.E. / B.Tech. Lateral Entry	6	12

5.2 A student is ordinarily expected to complete the B.E./B.Tech. Programme in 8 semesters (four academic years) but in any case not more than 14 Semesters for HSC (or equivalent) candidates and not more than 12 semesters for Lateral Entry Candidates.

5.3 Each semester shall normally consist of **80 working days or 540 periods of 50 minutes each.**

5.4 The Dean Academics and the Head of the Department 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.

5.5 The Dean Academics in consultation with the Head of the Department may schedule 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, following method shall be used.

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

5.6 The total duration of the programme reckoned from the commencement of the first semester to which the student was admitted, shall not exceed the maximum duration specified irrespective of the period of break of study or prevention in order that the student may be eligible for the award of the degree.

6. COURSE REGISTRATION

6.1 Each student on regular admission shall register for all the courses prescribed in the curriculum in the student's first year of study.

6.2 A student has to earn the minimum number of total credits (160-165 Credits for Regular admission students and 120-125 Credits for Lateral Entry admission students), specified in the curriculum of the chosen programme of study in order to be eligible to obtain the degree. However, a student can earn more than the number of credits, if he/she wishes. In such case, the highest grades in the relevant category would be considered for CGPA calculation.

6.3 From fourth semester onwards, a student has the option of registering for additional courses or dropping existing courses in the 'Scheduling of Courses' of the programme. Total number of credits of such courses cannot exceed 6. However, **the maximum number of credits the student can register in a particular semester cannot exceed 30,** excluding the courses for which the student has done **reappearance registration**. The credits for industry supported courses are also included in calculating the number of credits per semester.

6.4 The registration for the courses, from second semester, will commence three days after the declaration of the examination results of preceding semester. The students shall register for the courses with the guidance of the student's Faculty Mentor. If the student wishes, the student may drop courses (vide clause 6.3) within five working days after the commencement of the concerned semester and complete the registration process.

6.5 No course shall be offered by a Department unless a minimum of 20 students register for that course.

6.6 After registering for a course, a student shall attend the classes, satisfy the attendance requirements (vide clause 9.1 and 9.2), earn Continuous Assessment Marks and appear for the End Semester Examinations, except for the arrear courses.

6.7 The students satisfying the following conditions shall be permitted to carry out their final semester Project work for six months in industry/research organizations. The student should not have current arrears and shall have CGPA of 7.50 and above. The student shall undergo the eighth semester courses in the sixth and seventh semesters. The Head of Department, in consultation with the faculty handling the said courses shall forward the proposal recommended to Dean Academics, Controller of Examinations and further approval by the Head of Institution at least 4 weeks before the commencement of the sixth semester of the programme..

7. REAPPEARANCE REGISTRATION

7.1 If a student fails in a Theory or a Theory-cum-practical course, the student shall do reappearance registration for that course in the subsequent semester by retaining the Continuous Assessment Marks already earned.

7.2 If the Theory or Theory-cum-practical course, in which the student has failed, is an elective, the student may register for the same in the subsequent semesters.

7.3 The student who does not obtain bonafide certificate in any practical course/ project shall register for the same in the subsequent semester, when offered next, and repeat the course. In this case, the student shall attend the classes, satisfy the attendance requirements (vide clause 9), earn Continuous Assessment Marks and appear for the End Semester Examinations. However, if a student does not appear for End Semester Examinations after completing all the requirements of the practical course and obtaining the bonafide certificate, the student shall do reappearance registration for that course in the subsequent semester and attend end semester examination without repeating the course.

7.4 If a student is not eligible to appear for end semester examination due to lack of attendance, the student has to register for all the courses in the semester again, when offered next, attend the classes and fulfill the attendance requirements as per clause 9.

7.5 A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear the same course for improvement of Grade / Marks.

8 WITHDRAWAL

A student may, for valid reasons (medically unfit / unexpected family situations / Sports person representing Tamil Nadu / India with prior permission for

participation from Principal / CoE / Dean Academics), be granted permission to withdraw (after registering for the examinations) from appearing for any course or courses in the End Semester Examination of a particular semester. The student may withdraw by following the due process of the COE's office before the commencement of examination. This facility can be availed only once during the entire duration of the degree programme.

9. REQUIREMENTS FOR APPEARING FOR CONTINUOUS ASSESSMENT TESTS AND END SEMESTER EXAMINATIONS

9.1 A Candidate 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 atleast 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 5.5.

9.2 However, a candidate 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 candidate 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.

9.3 Candidates who **secure less than 65% overall attendance and candidates who do not satisfy the clause 9.1 and 9.2** shall not be permitted to write the End Semester examination at the end of the semester 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.

9.4 Student who is permitted by the respective Head of the Department to carry out final semester project at Industries/Organizations/Higher learning institutions should submit the attendance certificate from the competent authority at every project review meetings and at the time of project report submission.

9.5 The days of suspension for a student on disciplinary grounds will be considered as days of absence for calculating the percentage of attendance for the course.

9.6 A student shall be permitted to appear for the terminal examinations only if,

i. he/she satisfies the attendance requirements
ii. the student's conduct has been satisfactory

10. MALPRACTICE

Students taking exams shall be prohibited from entering into the Examination Halls/Laboratories with any book or portion of book, manuscript, or any unauthorized written/printed/electronic content, communicating with or copying from each other or communicating with anyone outside the Examination Hall/Laboratories. Electronic gadgets, Programmable calculator and mobile phone shall not be permitted inside the Examination hall/Laboratories.
However, any required code-books and data sheets/books as specified in the question paper will be supplied inside the Examination hall/laboratories by the office of the Controller of Examinations. The students are warned that any form of malpractice will be dealt with severely. The punishment may include debarring/cancelling the particular examinations registered by the student in that semester, and/or award of Zero marks to all registered courses of that Semester. Severe violations would attract strict punishments. Disciplinary action will be taken against the students by the college authorities after conducting enquiry.

11. EVALUATION STRATEGY

The total marks for each course generally (Theory, Practical, Theory cum Practical and Project Work) will be 100, comprising of two components namely Continuous Assessment Marks (CAM) and End Semester Examination (ESE). However, there could be some open elective courses, Industry Supported Courses human excellence courses, one credit/two credit value added courses and Mandatory courses that have only continuous assessment for 100 marks without an End-Semester Examination.

The Department Consultative Committee (DCC) has to approve such courses every semester. The scheme of assessment may also be decided by the faculty handling the course concerned with the approval from DCC and shall be made available to the students during the online course registration. Each course shall be evaluated for a maximum of 100 marks. The distribution of Continuous Assessment Marks (CAM) and End Semester Examination Marks(ESM) are given in **Table 7.**

Table 7 : Assessment Components

S.No	Category of Course	Continuous Assessment Marks (CAM)	End Semester Examination Marks(ESM)
1	Theory Courses	40 Marks	60 Marks
2	Laboratory Courses	50 Marks	50 Marks
3	Theory Cum Practical Courses	50 Marks	50 Marks
4	Project Work	50 Marks	50 Marks
5	Mandatory Courses (Non – Credit & Credit Non CGPA)	100 Marks	Nil

11.1 Marks Distribution of Continuous Assessment Marks (CAM) & End Semester Exam Marks (ESM)

The mark distribution is dependent on the credit weightages of various components of the courses such as Theory, Practical, Theory cum practical and Project Work. For the continuous assessment tests, course faculty shall decide on the mark distribution and question paper pattern. The question paper must follow Revised Bloom's Taxonomy action verbs and indicate expected knowledge level and Course Outcome(CO).Other modes of assessment are group presentation, project report, poster preparation, open book tests, Cooperative learning report, Journal paper review, Prototype or Product Demonstration, Activities, Field trip etc.,

The End Semester Examination (Theory / Theory cum Practical& Practical) of 3 hours duration shall ordinarily be conducted between November and January during the odd semesters and between April and June during the even semesters.

Table 8 : Scheme for Course Assessment

S. No	Course Type		Marks Breakup*												
			Continuous Assessment Components								End Semester Components				
			CAT 1	CAT 2	Other Assessments #	Average of Pre/post - test/viva for each experiment	Average of marks for Experiment report for each experiment	Model Exam/Report	Review 1	Review 2	Review 3	Written Exam	Practical Exam	Practical Exam Viva- voce	Capstone Project Report and viva-voce	Capstone Project Outcome
1	Theory		15 (100)	15 (100)	10 (50)	-	-	-	-	-	-	60 (100)	-	-	-	-
2	Lab		-	-	-	10	20	20 (100)	-	-	-		45 (90)	5 (10)	-	-
3	Theory + Lab	Theory	15 (100)	15 (100)	-	- Average of Pre/post - test/viva for each experiment	-	-	-	-	-	50 (100)	-	-	-	-

		Lab	-	-	-	-	10	10 (100)	-	-	-	-	-	-	-	-
4	Project (capstone)		-	-	-	-	-	-	10 (50)	20 (50)	20 (50)	-	-	-	45 (90)	5 (10)

*mark weightage (outside brackets) and maximum marks for the exam conducted (in brackets). The maximum marks could vary depending on the credit component for lecture / lab / project.

Open book test, Cooperative learning report, Assignment, Journal paper review, Group Presentation, Project report, Poster preparation, Prototype or Product Demonstration etc(as applicable).Two assessments for 25 marks each may be conducted periodically, spread out through the semester and reflected in the course plan. However the course instructor handling the subject may decide upon the number of other assessment for the course.

11.2 PROJECT WORK

11.2.1 For final year Project Work out of 100 marks, the maximum marks for Continuous Assessment is 50 marks and that for the End Semester Examination (project report evaluation and viva-voce examination) is 50 marks. Project work may be assigned to a single student or to a group of students not exceeding 4 per group, under the supervision of faculty guide(s).

11.2.2 The Head of the Department shall constitute a review committee for each programme. There shall be a minimum of three faculty members in the review committee. There shall be three reviews in total, during the semester by a review committee. The student shall make presentation on the progress made before the review committee.

11.2.3 The project report shall be submitted before the project reviews with the approval of the guide. The project report, prepared according to the approved guidelines and duly signed by the guide and the Head of the Department, shall be submitted to the department as per the timeline announcement by the department. The End Semester Examination for project work shall consist of evaluation of the final project report by an external examiner, followed by a viva-voce examination conducted separately for each student, by a committee consisting of the Project Supervisor, External Examiner, and an internal examiner. The Controller of Examinations (CoE) shall appoint Internal and External Examiners for the End Semester Examination of the Project Work.

11.2.4The Continuous Assessment Marks (CAM) and End Semester Examinations marks (ESM) for Project Work and the Viva-Voce Examination will be distributed as indicated in **Table** 8

If a student fails to submit project report / does not appear for the ESE / fails in the End Semester Examination (ESE), he / she is deemed to have failed in the project work and shall have to re-register for the same when offered next.

12. ACADEMIC GUIDANCE/SUPPORT

12.1 FACULTY MENTOR

To help the students in planning their courses of study and for general advice on the academic programme, extra and co-curricular activities, the Head of the Department of the student will attach a certain number of students (say 30) to a faculty from the Department of the student, throughout his / her period of study. The Faculty Mentor shall advise the students in registering and reappearance of courses, authorize the processes concerned, monitor their attendance and progress and counsel them regarding academic and other activities periodically. If necessary, the Faculty Mentor may also discuss with or inform the parents about the progress / performance of the students concerned.

The responsibilities for the faculty mentor shall be:

- To inform the students about the various facilities and activities available to enhance the student's curricular and co-curricular activities.
- To guide student registration of the courses.
- To maintain academic records, details of industrial visits, extra-curricular and co- curricular activities of their wards.
- To monitor the academic and general performance of the students including attendance and to counsel them accordingly.

12. 2 COURSE INSTRUCTOR

12.2.1 The faculty handling the course is called the Course Instructor. He/She is responsible for planning the modalities associated with the conduct of the course. The number and types of other assessments to be carried out to evaluate the continuous assessment marks need to be decided by all the course instructors handling the course along with the course coordinator. In the case of a single teacher handling the course, he/she is the course coordinator.

12.2.2 Every course instructor is required to maintain an "ATTENDANCE AND ASSESSMENT RECORD" for every semester which consists of attendance marked in each theory/laboratory/EEC class, the assessment marks and the record of class work (topics covered), separately for each course handled by the teacher. This should be submitted to the Head of the Department periodically (at-least four times in a semester) for checking the syllabus coverage and the records of assessment marks and attendance. The Head of the Department will affix his/her signature and date after due verification. At the end of the semester, the record should be verified by the Head of the Department

who shall keep this document in safe custody (for eight years). The records of attendance and assessment of both current and previous semesters should be available for inspection.

12.3 TEACHING ASSISTANTS

The course instructor will be assisted in multiple ways by teaching assistants. Teaching assistants can be teaching fellows, post graduate students or research scholars. They can help the faculty in monitoring classes, taking attendance, conducting tutorials, practical classes and evaluations.

12.4 COMMON COURSE COMMITTEE

12.4.1 A theory course handled by more than one teacher shall have a "Common Course Committee" comprising of all teachers teaching that course. One of the teachers shall be nominated as the Course Coordinator by the Chairman of the concerned Faculty, duly approved by the Dean, Academics.

12.4.2 The first meeting of the Common Course Committee shall be held at least 10 days before the commencement of the semester. The entire week by week course plan is to be charted out by the common course committee and submitted to the monitoring committee before the commencement of classes. The nature and weightage of the continuous assessments and a common scheme of evaluation for the assessments shall be decided within the framework of the Regulations. All the instructors handling the course need to interact at-least once in two weeks, at designated times as indicated in the time table and decide on the action plan for the next two weeks. Wherever feasible, the common course committee shall prepare a common question paper for the continuous assessment tests also.

12.5 MONITORING COMMITTEE

A separate monitoring committee will be constituted for each semester, comprising of the programme in-charge and at-least two senior professors not associated with teaching the particular class, to be nominated by the Head of the Department. The monitoring committee invites the course instructors/course coordinators for the meeting. The responsibilities of this committee include the following:

i. Analyse and approve the course plan put forward by the course committee / course instructor
ii. Suggest modifications to the course plan if needed
iii. Monitor periodically (once in 2 weeks) whether the courses are conducted according to the course plan and syllabus is completed according to the course plan
iv. Assess the progress of students
v. Assess the attendance details of students

vi. Take corrective action based on the feedback got from the class committee meeting from the students
vii. Handle the requests put forth by the students.

12.6 CLASS COMMITTEE

There will be a class committee for every semester with the Head of the Department as the convener and the monitoring committee members as members. At-least two student representatives from each batch will be invited for the class committee meetings. The Class Committee shall meet at least thrice in a semester, once at the beginning of the semester, once after the CAT1 examination and once after the CAT2 examination to review the marks. The responsibilities of the class committee includes the following:

- To review periodically the progress of the classes
- To discuss issues concerning curriculum and syllabi and the conduct of the classes with the students and address their concerns if any
- Communicate the feedback to the course instructors through the monitoring committee members

12.7 INDUSTRY ADVISORY COMMITTEE

An industry advisory committee comprising of representatives from various industries, chosen from our alumni will be formed. This committee will meet at least once in a semester and discuss how the industrial requirements can be incorporated in the curriculum and also discuss other ways of helping the students - projects, internships, mentor ships, etc.

13. PASSING REQUIREMENTS

A student is declared to have successfully passed a theory based course if he/she has secured:

- A minimum of 45% marks in the End Semester Examinations.
- A minimum of 50% marks on combining both Continuous Assessment Marks (CAM) and End Semester Examination Marks(ESM).

A student is declared to have successfully passed a Theory cum practical course if he/she has secured

- A minimum of 45% marks in the theory End Semester Examination.
- A minimum of 50% marks on combining both Continuous Assessment Marks (CAM) and End Semester Examination Marks (ESM) of the theory component.

A student is declared to have successfully passed a practical / project based course if he/she has secured:

- A minimum of 50% marks in the End Semester Examinations.
- A minimum of 50% marks on combining both Continuous Assessment Marks (CAM) and End Semester Examination Marks ESM).

For a student who does not meet the minimum passing requirements, the term "**RA"** against the course will be indicated in his/her grade sheet. He/she shall reappear in the examinations for the course as arrear or re-register for the course in the subsequent semesters or when offered next.

For a student who is absent for end-semester theory / practical / project viva-voce, the term **"RA-AB"** will be indicated against the corresponding course. He/she shall reappear for the end semester examination of that course as arrear in the subsequent semester or when offered next.

The letter grade **"W"** will be indicated for the courses for which the student has been granted authorized withdrawal from the particular course (refer Clause 8).

For mandatory (non-credit non CGPA courses), the student must satisfy the minimum attendance requirement & passing criteria as specified for the course as detailed in Annexure II.

14. ABSOLUTE GRADING POLICY

All assessments of a course will be evaluated on absolute marks basis. However, for the purpose of reporting the performance of a candidate, letter grades, each carrying certain number of points, will be awarded as per the range given in Table 9, based on the percentage of marks obtained by the candidate in each subject.

Table 9 : Absolute Grading – Letter Grade and its range

Sl. No.	Range of percentage of total marks	Letter Grade	Grade Points
1.	91 to 100	O (Outstanding)	10
2.	81 to 90	A+ (Excellent)	9
3.	71 to 80	A (Very Good)	8
4.	61 to 70	B+ (Good)	7
5.	50 to 60	B (Average)	6
6.	<50	RA (Re-appearance)	0
7.	Shortage of Attendance	RA-SA(Re-appearance due to shortage of attendance)	0
8.	Absent	RA-AB (Re-appearance due to absence)	0
9.	Withdrawal from examination	W	0

Sl. No.	Range of percentage of total marks	Letter Grade	Grade Points
10.	Pass in mandatory-non-credit course	P	0
11.	Fail in mandatory-non-credit course	F	0

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".

'RA' indicates that Reappearance is mandatory for that course concerned. 'SA' denotes shortage of attendance and hence prevented from writing the End Semester Examination. P and F are grades for mandatory, but non-credit courses.

14.1 GRADING FOR MANDATORY COURSES

14.1.1 Mandatory Courses are courses that are required to be completed to fulfill the degree requirements (e.g. Environmental Science, Personality Development Courses, Allied Skills etc.).They are normally non–credit grade point Courses. These courses will not be taken into consideration for the SGPA / CGPA calculations. Each of these courses are assessed continuously and internally for a total mark of 100. The pass mark is 50%. Students who fail to pass this course, are required to repeat the course, when offered next.

14.1.2 For the Mandatory non-credit courses student completing the course will be awarded Pass grade (P) and those who fail to satisfy the attendance requirement or fail to satisfy the minimum passing requirement of 50% marks, will be awarded Fail(F) grade and the student must re-register for the course when it is offered next.

14.1.3 The criteria for computing the mandatory non credit courses like personality Development and Allied Skills are listed in **Annexure - II**

14.1.4 For Mandatory non-credit courses the student must satisfy the minimum attendance requirement & passing criteria as specified for the course. These courses do not carry credits but needs to be completed to fulfill the degree requirements

14.1.5. A student can apply for revaluation of the student's semester examination answer paper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee along with prescribed application to the COE through the Head of the Institution. The COE will arrange for the revaluation and the results will be intimated to the student concerned through the Head of the Institution. Revaluation is not permitted for laboratory course and project work.

14.2 GRADE SHEET

After the results are declared, grade sheets will be issued to each student, which will contain the following details:

- The College Name and Affiliating University.
- The list of courses registered during the semester and the grades scored.
- The Semester Grade Point Average (SGPA) for the semester.
- The Cumulative Grade Point Average (CGPA) of all courses enrolled from first semester onwards.

On completion of a semester, each student is assigned a Semester Grade Point Average which is computed as below for all courses registered for, by the student during that semester.

The overall performance of a student at any stage of the Degree programme is evaluated by the Cumulative Grade Point Average (CGPA)up to that point of time

$$\text{SGPA/CGPA} = \frac{\sum_{i=1}^{N}(C_i \times GP_i)}{\sum_{i=1}^{N} C_i}$$

where C_i is the credit for a course in that semester and GP_i is the Grade Point earned by the student for that course. The SGPA and CGPA is rounded off to two decimals.

15. ELIGIBILITY FOR THE AWARD OF DEGREE

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

- Successfully gained the required number of total credits as specified in the curriculum corresponding to the student's programme within the stipulated time.
- Successfully completed the course requirements and has passed all the prescribed examinations in all the eight semesters (six semesters for lateral-entry) within a maximum period of 7 years (6 years for lateral-entry) reckoned from the commencement of the first semester to which the candidate was admitted.
- Successfully passed any additional courses prescribed by the Department concerned whenever readmitted under regulations 2019.
- No disciplinary action pending against him/her.

16. CLASSIFICATION OF B.E/ B.TECH DEGREE

The degree awarded to eligible students will be classified as given in

Table 10: Classification of the B.E/ B.Tech Degree

Sl. No.	Class Awarded	Criteria
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 :** a) 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). b) Withdrawal from examination will not be considered as an appearance. c) Should have secured a CGPA of not less than 8.50 d) 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. e) Should NOT have been prevented from writing the end semester examination due to lack of attendance in any semester.
2.	First Class	A student who satisfies the following conditions shall be declared to have passed the examination in **First Class** : a) Should have passed the examination in all the courses of all eight semesters (6 semesters in the case of Lateral Entry) **within Six years** (Five years in the case of Lateral Entry). b) 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 six years (five years in the case of lateral entry) for award of First class c) Should have secured a CGPA of not less than 7.00
3.	Second Class	All other students (not covered in clauses at S.No.1 & 2 under Clause 16) who qualify for the award of the degree (Clause 15) shall be declared to have passed the examination in **Second Class.**

Note: A student who is absent for the end semester examination in a course / project work Viva Voce after having registered for the same will be considered to have appeared for that examination (except approved withdrawal from end semester examinations as per Clause 9) for the purpose of classification.

17. PHOTOCOPY / REVALUATION

A candidate can apply for photocopy of his/her semester examination answer p aper in a theory course, within 2 weeks from the declaration of results, on payment of a prescribed fee through proper application to the Controller of Examinations through the Head of Institutions. The answer script is to be valued and justified by a faculty member, who handled the subject and recommend for revaluation with breakup of marks for each question. Based on the recommendation, the candidate can register for the revaluation through proper application to the Controller of Examinations. The Controller of Examinations will arrange for the revaluation and the results will be intimated to the candidate concerned through the Head of the Institutions. Revaluation is not permitted for practical courses and for project work. A candidate can apply for revaluation of answer scripts for not exceeding 5 subjects at a time

18. AWARD OF DEGREE

The Academic Council of the institution will approve the award of Degree to all eligible students. The degree will be issued by Anna University, Chennai and the consolidated Grade Sheet will be issued by the institution. The consolidated grade sheet will specify any specializations and distinctions that the student has earned during the course of the study.

19. PROVISION FOR AUTHORISED BREAK OF STUDY

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

19.2 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 candidate may apply for additional break of study not exceeding another one year by paying prescribed fee for break of study. If a candidate intends to temporarily discontinue the programme in the middle of the semester for valid reasons, and to rejoin the programme in a subsequent year, permission may be granted based on the merits of the case provided he/she applies through Dean Academics in advance, but not later than the last date for registering for the end semester examination of the semester in question, to the Head of the Institution stating the reasons therefore and the probable date of rejoining the programme.

19.3 The candidates permitted to rejoin 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 rejoining in new regulations shall apply through Dean Academics in the prescribed format to the Head of the Institution at the beginning of the readmitted semester itself for prescribing additional courses, if any, from any semester of the regulations in-force, so as to bridge the curriculum in-force and the old curriculum.

19.4 The authorized break of study would not be counted towards the duration specified for passing all the courses for the purpose of classification.

19.5 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.

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

20. DISCIPLINE

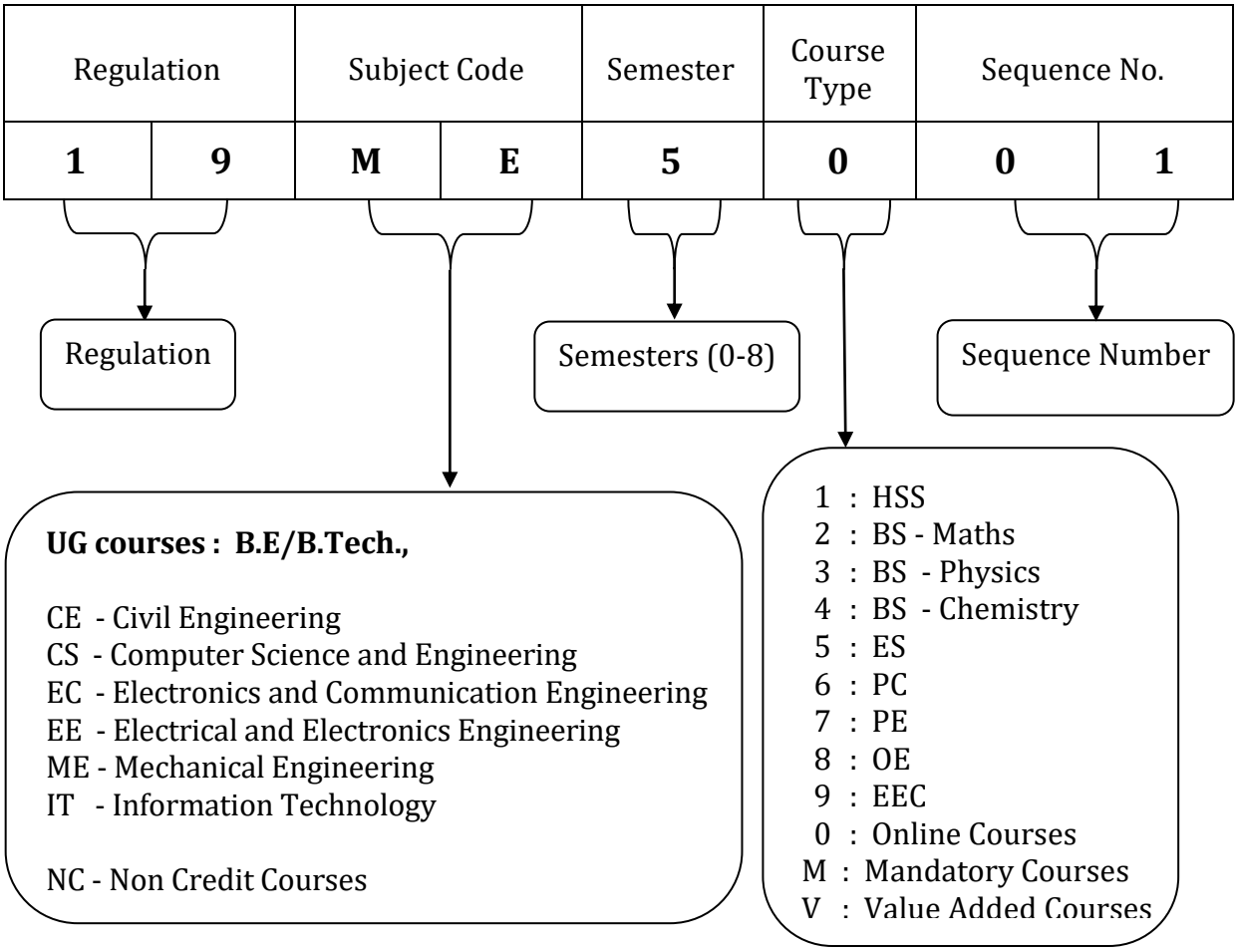
Every student is required to maintain discipline and decorum both inside and outside the institution campus. They shall follow all the rules and regulations and should not indulge in any activity which can tarnish the reputation of the University or Institution. The Principal shall refer any act of indiscipline by students to the Discipline and Welfare Committee and other appropriate committees for action.

21. REVISION OF REGULATIONS AND CURRICULUM

The Institution may from time to time revise, amend or change the Regulations, scheme of Examinations and syllabi, if found necessary. Academic Council assisted by Board of Studies and Standing Committee will make such revisions /changes.

ANNEXURE – I

COURSE NUMBERING SCHEME



For Example :

Professional Core offered by the Department
19ME1601 - 19 : Regulation, ME : Mechanical Engineering, 1 : Semester,
6 : Professional Core, 01 : Sequence number of the course

Mandatory Courses offered by the Department
19ME0M01 - 19 : Regulation, ME : Mechanical Engineering, 0 : Semester,
M : Mandatory Courses, 01 : Sequence number

General Mandatory Courses (One Credit Non CGPA Courses)
19NC0M01 - 19 : Regulation, NC: Non Credit Course, 0 : Semester, 6
M : Mandatory Courses, 01 : Sequence number of the course

Value Added Courses offered by the Department
19ME0V01 - 19 : Regulation, ME : Mechanical Engineering, 0 : Semester,
V : Value Added Courses, 01 : Sequence number

ANNEXURE – II

MANDATORY NON CGPA COURSES

19NC0M01 National Service Scheme (NSS)

1.	Pre –requisites/ Eligibility Conditions	-
2.	Detail of Course Content /Syllabus	
3.	Duration of the Course	Before 7th Semester
4.	Assessment Procedure	-
5.	Criteria for allocation of credit	Attend one orientation programme and participation certificate for 75 contact hours/year and participation certificate in 2 activities
6.	In case of failure	-

19NC0M02 National Sports Organization

1.	Pre –requisites / Eligibility Conditions	-
2.	Detail of Course Content / Syllabus	As prescribed by the Physical Education department
3.	Duration of the Course	50 Hours per Year Minimum contact hours required – 38 Hours per Year
4.	Assessment Procedure	As decided by the Physical Education department
5.	Criteria for allocation of credit	Participation in Ties / Zone / Inter Zone / Open Tournament or representation in intramural Sports & Games with 75% attendance in ground practice / Pass on Examination conducted by Physical Education department.
6.	Incase of failure	(If the students core less than 50 marks in the above criteria)Repeat the course

19NC0M03 Youth Red Cross

1.	Pre –requisites / Eligibility Conditions	-
2.	Detail of Course Content /Syllabus	Periodical meetings, Blood Donation Camp, Orphanage visit, Awareness Programmes , Test related to YRC(Multiple Choice Questions)
3.	Duration of the Course	One year
4.	Assessment Procedure	Evaluation will be based on attending periodical meetings (Attendance) / Camp / Orphanage visit / Test / Awareness Programmes
5.	Criteria for allocation of credit	Participation certificate in 2 activities
6.	Incase of failure	-

19NC0M04 Yoga for Empowerment

1.	Pre –requisites/ Eligibility Conditions	As prescribed by Yoga class practitioners
2.	Detail of Course Content /Syllabus	
3.	Duration of the Course	60 Hours per Year. Minimum contact hours required – 45Hours per year
4.	Assessment Procedure	-
5.	Criteria for allocation of credit	Completion certificate issued by the Yoga Club / Yoga class practitioners
6.	Incase of failure	-

19NC0M05 Aptitude Proficiency Certification

1.	Pre –requisites/ Eligibility Conditions	As prescribed by the course coordinator
2.	Detail of Course Content / Syllabus	
3.	Duration of the Course	40 periods with minimum 70% of attendance
4.	Assessment Procedure	As prescribed by the course coordinator
5.	Criteria for allocation of credit	Pass in End Examination / Minimum score in GMAT/CAT /NAC/MAT
6.	Incase of failure	Repeat the course

19NC0M06 Creative Thinking & Innovations

1.	Pre –requisites/ Eligibility Conditions	Prior permission from the HOD is must
2.	Detail of Course Content /Syllabus	Refer **Annexure-IV**
3.	Duration of the Course	15 Hours
4.	Assessment Procedure	As per the procedure specified for theory courses
5.	Criteria for allocation of credit	Proof for the successful completion of the course provided by the course instructor
6.	In case of failure	---

19NC0M07 English Proficiency Certification

1.	Pre –requisites/ Eligibility Conditions	As prescribed by the certifying authority
2.	Detail of Course Content / Syllabus	
3.	Duration of the Course	
4.	Assessment Procedure	
5.	Criteria for allocation of credit	A certificate for attending BEC course / Minimum score in TOFEL iBT / GRE/IELTS
6.	In case of failure	Repeat the course

19NC0M08 Foreign/Vernacular Languages

1.	Pre –requisites/Eligibility Conditions	-
2.	Detail of Course Content /Syllabus	As prescribed by the course conducting Universities / Schools
3.	Duration of the Course	
4.	Assessment Procedure	
5.	Criteria for allocation of credit	Pass certificate issued by the competing authority
6.	In case of failure	Repeat the course

19NC0M09 Globally Accepted Certification Courses

1.	Pre-requisites /Eligibility Conditions	Prior permission from the HOD is must
2.	Detail of Course Content / Syllabus	As prescribed by the certifying authority
3.	Duration of the Course	
4.	Assessment Procedure	
5.	Criteria for allocation of credit	Proof for the successful completion of the course provided by the globally accepted certifying agencies like HPATA / Microsoft / National Instruments (Lab View) / Oracle / IBM / CISCO Networking Academy / ADOBE / REDHAT / Sun Microsystems JAVA/ Softwares related to Mechanical and Civil Engineering
6.	Incase of failure	-

19NC0M10 Soft skills

1.	Pre –requisites/ Eligibility Conditions	Completion of 2nd semester
2.	Detail of Course Content /Syllabus	As prescribed by Training and Skill Development(TSD)
3.	Duration of the Course & Assessment Procedure	-
4.	Criteria for allocation of credit	Successful completion of Soft skill Training with minimum contact hours prescribed by TSD
5.	Incase of failure	-

ANNEXURE – III

INDUSTRIAL TRAINING/INTERNSHIP

Industrial Training

1.	Pre –requisites/ Eligibility Conditions	After completion of the third semester. The student may undergo Industrial training in reputed organization after getting prior permission from HOD
2.	Detail of Course Content / Syllabus	Inplant training in any organization like BSNL,TTPS, BHEL, NLC etc., related to their programmes
3.	Duration of the Course	As in Table 4
4.	Assessment Procedure	1. Student has to submit a report. 2. Evaluation Committee will be constituted by the respective department HOD to assess the report based on the following criteria's. • Evaluation of report given by the student(40%) • Student's presentation (40%) • Oral Examination (20%)
5.	Criteria for allocation of credit	Satisfactory completion certificate issued by the respective department HOD based on the performance of the student and a certificate from the organization concerned.
6.	In case of failure	-

Internship

1.	Pre –requisites / Eligibility Conditions	After completion of the third semester. The student may undergo intensive training after getting prior permission from HOD
2.	Detail of Course Content / Syllabus	Internship Training in R&D organization like CSIR, DRDO, IITs and IISC etc related to their programmes
3.	Duration of the Course	As in Table 4
4.	Assessment Procedure	1. Student has to submit a report for Internship 2. Evaluation Committee will be constituted by the respective department HOD to assess the report based on the following criteria's . • Internship Report(40%) • Student's presentation(40%) • Oral Examination (20%)
5.	Criteria for allocation of credit	Satisfactory completion certificate issued by respective department HOD based on the performance of the student and a certificate obtained from the organization concerned.
6.	Incase of failure	-

ANNEXURE - IV

19NC0M06 CREATIVE THINKING & INNOVATIONS CREDIT : 1

Course Outcome :

CO1 : After completing the course the students will be critical thinkers and creative problem solvers by generating new ideas.

INTRODUCTION

Types of Human Thinking : Remembering and Recalling - Understanding - Applying - Analyzing - Evaluating Creating - Opposing - Categories of Types of Thinking, Vertical vs. Lateral Thinking -Concrete Thinking vs. Abstract Thinking - Convergent Thinking vs. Divergent Thinking - Logical vs. Analytical Thinking - Creative Thinking vs. Analytical Thinking - Sequential (linear) Thinking vs. Holistic Thinking - Errors in thinking - Partialism - Adversary Thinking - Time scale error - Initial Judgement - Arrogance and Conceit. AIMS Goals Objective - Consider all factors - Plus Minus Interesting - Other Peoples View - Alternatives Possible choices.

CRITICAL THINKING SKILLS

Interpretations Skill - Analysis, Skill - Inference Skills – Evaluation – Explanation - Self Regulation Skills.

CREATIVE THINKING & INNOVATION

Creative vs. Critical Thinking - Creativity vs. Innovation - Invention vs. Innovation - Creativity and Innovation in Entrepreneurship - Creative Team and Collaborative Thinking - Exploring Innovation and Creativity within Organizations.

DESIGN THINKING

What is Design Thinking - Design thinking process :Empathy understanding of Problem, Define the problem, Ideate (Generating new ideas for Problem Solving),Prototype, Test.

IDEATION TOOLS AND METHODS

Brain storming - Reverse Brainstorming - Mind mapping tool - SWOT Analysis – SCAMPER method.