

# **Pondicherry Engineering College, Puducherry – 605014**

(An Autonomous Institution of Government of Puducherry affiliated to Pondicherry University)



## **Regulations for B.Tech. Degree Programme**

(With effect from academic year 2018-19)

**(Approved in Fourth Academic Council Meeting held on 8<sup>th</sup> December 2018)**

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## 1. INTRODUCTION

- 1 The Regulations presented here are common to all the B.Tech. Degree Programmes of Pondicherry Engineering College (PEC) and binding on all parties concerned, including the Students, Faculty, Staff and Departments.
- 2 This set of Regulations contains the course structure, curriculum and the provisions governing the policies and procedures of imparting instructions of courses, conducting of examinations, evaluation and certification of students' performance, leading to the said Degree Programme(s).
- 3 The set of Regulations, on approval by the Academic Council of PEC, may supersede all the corresponding earlier sets of Regulations of the College, along with all the amendments thereto, and shall be binding on all students undergoing the said Degree Programme(s).
- 4 This set of Regulations may evolve and get revised/refined or updated or modified or changed through appropriate approvals from the Academic Council, from time to time.
- 5 The effect of periodic refinements in the Academic Regulations & Curriculum, on the students *admitted in earlier years*, shall be dealt with appropriately and carefully, so as to ensure that those students are not subjected to any unfair situation whatsoever, although they are required to conform to these revised set of Regulations & Curriculum, without any undue favour or considerations.
- 6 All disputes arising from this set of Regulations must be addressed to the Academic Council. The decision of the Academic Council is final and binding on all the parties concerned.
- 7 Any legal dispute that may arise from this set of Regulations shall be limited to the legal jurisdiction determined by the location of the college and not that of any other parties.

## 2. DEFINITIONS

In these regulations, unless the context otherwise requires:

- a) **“University”** means Pondicherry University
- b) **“College”/“Institute”** means ,Pondicherry Engineering College
- c) **“Principal”** means the Principal of Pondicherry Engineering College
- d) **“Programme”/“Degree”** means, UG Degree Programme, (B.Tech. degree programme)
- e) **“Lateral Entry”** means, admission of students directly into the second year of B.Tech. Degree programme after completion of Diploma Course in Engineering
- f) **“Branch”/“Discipline”** means, specialization or discipline of B.Tech. degree programme like Civil Engineering, Information Technology, etc.,
- g) **“Parent Department”** means, the department of the chosen discipline of engineering
- h) **“BoS”** means, the Board of Studies for the programmes offered by a department
- i) **“HoD”** means, Head of the Academic Department
- j) **“Course Instructor”** means, a Faculty teaching a theory/laboratory subject
- k) **“Course”** means, a theory course or practical course offered in a semester
- l) **“Core Course”** means, a compulsory course in the curriculum
- m) **“Elective Course”** means, an optional course in the curriculum
- n) **“Co-curricular activities”** means, specific activities that will help the student gain mileage in his professional career
- o) **“Odd Semester”** means, the Semester that is typically from July to November
- p) **“Even Semester”** means, the Semester that is typically from January to April
- q) **“Summer Vacation”** means, the inter semester vacation between Even Semester and Odd Semester
- r) **“Period”** means, 50 minutes duration of a theory / practical class
- s) **“Day”** means, 8 periods of theory / practical classes in a calendar day
- t) **“Week”** means, 5 working days in a calendar week
- u) **“Enrollment”** means, Enlistment of a student in the rolls of a class in an academic year
- v) **“Arrear”** means, a course in which a student has failed (*has not fulfilled the examination passing criteria*)
- w) **“Regular Examination”** means, an examination conducted in a semester for a course which is prescribed in the curriculum of that semester
- x) **“Arrear Examination”** means, a semester examination conducted exclusively for the students who have failed in previous attempts
- y) **“First Attempt”** means, appearance in the semester examination of a course in a semester in which the student has registered for the course. If a student has registered for a course in a semester and ‘Absent’ for the semester examination conducted in that semester, it is also treated as the *First Attempt*
- z) **“Higher Learning Institutions”** means, any State or Central University or Institutes of National importance such as IISc/IITs/IIMs/NITs/IISERs or reputed Universities/Institutes located outside India
- aa) **“GPA”** means, Grade Point Average
- bb) **“CGPA”** means, Cumulative Grade Point Average
- cc) **“MoU”** means, Memorandum of Understanding
- dd) **“He”** includes both genders he and she; Similarly “him” includes “her” as well

### 3. BRANCHES OF STUDY

College offers B.Tech. programmes in **eight** branches listed below:

- 1) Civil Engineering (CE)
- 2) Mechanical Engineering (ME)
- 3) Electronics and Communication Engineering (EC)
- 4) Computer Science and Engineering (CS)
- 5) Electrical and Electronics Engineering (EE)
- 6) Electronics and Instrumentation Engineering (EI)
- 7) Chemical Engineering (CH)
- 8) Information Technology (IT)

### 4. ELIGIBILITY FOR ADMISSION

All candidates seeking admission to the **First year of B.Tech. Degree** and direct admission to the **Second year of B.Tech. Degree** under the **Lateral Entry scheme** shall be required to satisfy the eligibility rules prescribed by the Pondicherry University and Government of Puducherry, as notified from time to time.

### 5. DURATION OF THE PROGRAMME

Duration of the B.Tech. programme shall be Eight Semesters [Four years] /Six semesters [Three years] for lateral entry students, with 16 instruction weeks per semester. The maximum period to complete the programme shall be 14 consecutive semesters [Seven years] /12 consecutive semesters [Six years] for lateral entry students.

### 6. PROGRAMME STRUCTURE

6.1 The medium of instruction is **English**.

6.2 i) A student admitted to the B.Tech. programme in a particular branch of engineering will earn the degree in that branch by fulfilling all the requirements prescribed in the regulations during the course of study.

ii) The student is also permitted to opt for earning an **honours degree** in the same discipline of engineering or a **minor degree** in another discipline of engineering or a **minor degree** in Entrepreneurship in addition to the degree in his own discipline of engineering. The student will be allowed to exercise this option at the end of first year based on his academic performance in the first year. The students admitted through lateral entry can exercise this option at the end of third semester, based on the GPA scored in the third semester examination.

6.3 The curriculum of every programme will have courses that are categorized as follows :

- i) Humanities, Social Sciences and Management Courses (HSM)
- ii) Basic Science Courses (BSC)

- iii) Engineering Science Courses (ESC)
- iv) Professional Core Courses (PCC)
- v) Professional Elective Courses (PEC)
- vi) Open Elective Courses (OEC)
- vii) Professional Activity Courses (PAC)
- viii) Mandatory non-Credit Courses (MCC)

6.4 Each course will have either one or more of three components namely Lecture (L), Tutorial (T) and Practice (P).

6.5 Each course is assigned credits as detailed below:

- i) Theory courses will carry either 3 or 4 credits - 3 credits for courses with 3 lecture periods per week and 4 credits for courses with 3 lecture periods and 1 tutorial period per week.
- ii) All Elective courses except online courses will carry uniformly 3 credits.
- iii) Practical courses will normally carry either 1 or 1.5 credits – 1.5 credits for courses with 3 practice periods per week and 1 credit for courses with 2 practice periods per week.
- iv) Project work carried out in the eighth semester is assigned 8 credits.
- v) Internship carries 2 credits
- vi) Mandatory non-Credit Courses carry zero credit.

#### 6.6 Total credits

- i) Total credits of all the courses in the curriculum for the B.Tech. degree shall be in the range of **155 to 160**.
- ii) The student opting for B.Tech. degree with Honours or B.Tech. degree with Minor is required to earn **additional 20 credits** starting from third semester. The students admitted in the second year through lateral entry and opting for Honours / Minor degree will earn the additional 20 credits starting from fourth semester.

#### 6.7 Credit distribution

Total of 155 to 160 credits are distributed among various subjects grouped under different categories as follows:

Sl. No.	Category	Credits	Course Category Code (CCC)
1	Humanities, Social Sciences and Management Courses	8-10	HSM
2	Basic Science Courses (Mathematics, Physics, Chemistry and Biology)	25-31	BSC
3	Engineering Science Courses (Workshop, Drawing, Basics of Electrical/Mechanical/Computer etc.,)	15-24	ESC
4	Professional Core Courses	60-70	PCC
5	Professional Elective Courses (from chosen discipline)	15-18	PEC
6	Open Elective Courses (from other technical/ emerging disciplines)	10	OEC
7	Professional Activity Courses (Project Work, Entrepreneurship, Seminar, Internship, Comprehensive Test)	14	PAC
8	Mandatory non-Credit Courses (Environmental Sciences, Induction, Indian Constitution, Essence of Indian Traditional Knowledge, Professional Ethics)	Non-credit	MCC
	<b>Total Credits</b>	<b>155-160</b>	

## 6.8 Curriculum for First Year

- i) The Curriculum for first year is common for all disciplines.
- ii) The eight disciplines are split into two groups, Group-I and Group-II. Although, courses offered in the first year are same for all branches, some of the courses offered in first semester to Group-I are offered in the second semester for Group-II and vice-versa. This arrangement is essentially to share the laboratory resources and balance the faculty work load between odd and even semesters.

## 6.9 Curriculum for Higher Semesters

- i) The curriculum from third semester through seventh semester, in general, cover professional core courses from the chosen discipline of engineering, basic science and basic engineering courses of interest to that particular discipline, elective courses and Mandatory non-Credit Courses.
- ii) Total credits in each semester shall be around 20 credits (excluding Open Elective Courses) and contact periods around 25 per week.
- iii) Curriculum in the eighth semester would cover only the Project work and Comprehensive test.

6.10 Apart from Mathematics I and Mathematics II offered in the first year, curriculum will have only one more mathematics course with a specific title indicating the course content. The syllabus of this course will cover the topics of interest to a particular branch of engineering. This course will be offered in the third or fourth semester.

6.11 Curriculum will have a compulsory course on “English for Communication” carrying 3 credits offered in first year. This course will have 2 lecture periods and 2 practice periods per week.

6.12 A course on Engineering Graphics and Design carrying 3 credits is offered in first year. This course will have 2 lecture periods and 4 practice periods per week.

6.13 A compulsory course on “Biology for Engineers” for all engineering disciplines is offered in the second year. This course carries 2 credit and will have 3 lecture periods per week.

6.14 A compulsory course on “Entrepreneurship” for all engineering disciplines is offered in the third year. This course carries 2 credit and will have 3 lecture periods per week.

6.15 A core Humanities course on “Industrial Management and Economics” will be offered in the fifth or sixth semester carrying 3 credits with 3 periods per week of theory classes.

## 6.16 Seminar

- i) The curriculum of all engineering disciplines will have a compulsory ‘Seminar’ course offered in sixth or seventh semester.
- ii) This course carries 1 credit.

- iii) The student will present a Seminar on a topic in an emerging area in his discipline of engineering. The student will make the presentation for a duration of 20 to 25 minutes and also submit a brief report running to 15 or 20 pages for the purpose of evaluation.

#### 6.16 Project Work

- i) The student shall carry out a '*project work*' in the eighth semester.
- ii) This project work carries 8 credits.
- iii) The student is given an option to carry out this project work either in the college or in an industry / research laboratory / higher learning institution.
- iv) The project work will be carried out under the supervision of a project guide from the department. In the case of student carrying out the project work outside the college, an external guide from the relevant organization shall be assigned in addition to the internal guide from the department.

#### 6.17 Internship

- i) The student is required to undergo '*internship*' in industry / research laboratory / higher learning institution for a minimum period of 6 weeks in a maximum of 3 spells during vacations.
- ii) The internship carries 2 credits.
- iii) Each spell of internship shall be for a period of not less than 2 weeks.
- iv) The main purpose of internship is to enhance the general professional outlook and capability of the student to advance his chances of improving the career opportunities. The student should get prior approval from the Head of the Department before undertaking the internship and submit a detailed report after completion for the purpose of assessment.
- v) The assessment of the internship will appear only in the eighth semester grade card irrespective of the semester vacation in which the internship is completed.
- vi) The project work carried out in industry in the eighth semester (*Regulation 6.16 (iii)*) is not to be treated as internship.

#### 6.18 Comprehensive Test

- i) The student is required take a '*Comprehensive Test*' on a scheduled date in the beginning of the eighth semester.
- ii) Comprehensive Test will carry 1 credit.
- iii) Comprehensive Test is meant for testing the higher order and critical thinking of the student in the respective domain. This test will have the standard of GATE examination.
- iv) The student who has failed to clear the Comprehensive Test shall be given one more chance to appear for the test before end of eighth semester.



### 6.19 **Mandatory non-Credit Courses (MCC):**

- i) Mandatory non-Credit Courses carry zero credit and are to be completed satisfactorily.
- ii) The Mandatory non-Credit Courses included in the curriculum are, Induction Programme, Environmental Science, Indian Constitution, Essence of Indian Traditional Knowledge and Professional Ethics.
- iii) Induction Programme and Environmental Science are covered in the first year. The remaining three courses are to be completed respectively in the Second, Third and Fourth year.

### 6.20 **Elective Courses:**

#### i) **Professional Elective Courses (PEC)**

- a) Professional Elective Courses are the elective courses offered by the parent department.
- b) Each department will offer a minimum of 5 elective courses and not more than 6 elective courses in the entire programme.
- c) Professional Elective Courses will be offered from fourth to seventh semester.
- d) An elective is offered only if fifteen or more number of students register for the course. Maximum number of students who can register for an elective is limited to seventy five. However, depending upon the demand for a course and the resource availability, The Dean (Academics), in consultation with the concerned HoD, can fix the maximum number of students who can be allowed to register for an elective course.

#### ii) **Open Elective Courses (OEC)**

- a) Open Elective Courses are Interdisciplinary elective courses offered by departments other than the parent department.
- b) Open Elective Courses shall not have any prerequisite.
- c) A student can register for not more than one Open Elective Course (other than online courses) in a semester, starting from fourth to seventh semester.
- d) A student shall earn a total of 10 credits during the entire programme of study.
- e) 10 credits will be earned by completing 4 courses, of which 2 courses are offered by the college and the remaining 2 courses are online courses offered in SWAYAM portal.
- f) Open Elective Courses offered by the college carry 3 credits and the online courses are assigned 2 credits.
- g) Of the 10 credits earned through Open Elective Courses, the students shall compulsorily complete one course in HSM category and earn either 3 credits (course offered by the college) or 2 credits (online course offered in SWAYAM).

- h) The student can complete the online courses offered in SWAYAM anytime between third and seventh semester on prior approval of the courses by the *Academic Courses Committee (vide Regulation 19.4)*.
- i) The grades scored in the online courses will appear only in the eighth semester grade card irrespective of the semester in which the course is completed.
- iii) **Dropping of Failed Elective Course:** A student who has failed to secure a pass grade in an elective course may reappear for the examination in the following semester or drop the elective course and subsequently register for another elective course in the following semester in place of the dropped elective course.
- iv) **Auditing of Elective Courses**
  - a) A student, by auditing a course, is permitted to attend classes but is not required to take examinations and earn credits.
  - b) Auditing is permitted only for elective courses (***Professional Elective or Open Elective***).
  - c) Students having a CGPA of 8.5 and above are only allowed to audit courses.
  - d) A student will be permitted to audit a course only on submission of a '*Letter of Purpose*' to Dean (Academics) justifying the need for attending the course and this letter shall be duly forwarded with a recommendation by the Faculty Advisor through the Head of the Department.
  - e) The student is required to maintain an attendance of 90% and above in the audited course. The attendance earned by a student in an audited course is not accounted for in the calculation of overall attendance in a semester.
  - f) The courses successfully audited by a student in a particular semester will appear with a Letter Grade 'X' in the Grade Card (*vide Regulation 9.1*).

#### 6.21 Honours Degree in the same engineering discipline

- i) The student shall be given an option to earn a honours degree in the same discipline of engineering at the end of first year based on his academic performance in the first year.
- ii) A student is eligible to exercise this option if he has passed all the subjects offered in the first year in the first attempt itself and has earned a CGPA of not less than 7.5.
- iii) Number of students who are admitted in the second year to the honours degree in each discipline of engineering shall be limited to 40% of the total intake in that discipline.
- iv) Honours degree in a particular discipline of engineering shall be offered for a batch of students if and only if a minimum of 10 eligible students opt for it.
- v) The student is required to earn an additional 20 credits (*over and above the total of 160 credits prescribed in the curriculum*) starting from the third semester onwards to become eligible for the

award of Honours degree. 20 credits shall be earned by the student by completing 5 additional courses of 4 credits each, one in each of the 5 semesters starting from third to seventh semester. The curricular content of these 5 courses are so framed that these courses will necessarily cover some advanced topics in the discipline of engineering.

- vi) The students admitted in the second year through *Lateral Entry Scheme* will also be given a chance to opt for *Honours degree*. Eligibility to avail this option is *CGPA of 7.5 and above with no arrears in the Third Semester*. The student will join the existing batch of students in the fourth semester and earn 16 credits by registering for prescribed courses offered up to seventh semester. The respective BoS will decide on a suitable course *in lieu* of the course offered in the third semester to facilitate the student to earn the remaining 4 credits.
- vii) Although 7.5 CGP with no arrears is the requirement at the entry level, a student is eligible to get the Honours degree only on completing the programme in '*First Class with Distinction*' class.
- viii) A student can exercise the option to withdraw from the Honours degree at any time after entry.
- ix) Details about the courses completed and credits earned for Honours degree will appear only in the '*Eighth Semester Grade Card*' and '*Consolidated Grade Card*'. These details will be listed under the heading '*Credits Earned for Honours degree*'. In the case of students who either withdraw from Honours degree or become ineligible for Honours degree by not securing '*First Class with Distinction*', the credits earned for the courses registered and successfully completed for Honours degree will be listed under the heading '*Additional Credits Earned*'.
- x) Nomenclature of Honours Degree is '*B.Tech.(Honours) in XXX*', where XXX is *Degree in which the student is enrolled*.

#### 6.22 Minor Degree in another engineering discipline

- i) The student shall be given an option to earn a minor degree in another discipline of engineering of his choice at the end of first year based on his academic performance in the first year.
- ii) A student is eligible to exercise this option if he has passed all the subjects offered in the first year in the first attempt itself and has earned a CGPA of not less than 7.5.
- iii) Number of students who are admitted in the second year to the minor degree in each discipline of engineering shall be limited to 40% of the total intake in that discipline.
- iv) Minor degree in a particular discipline of engineering shall be offered for a batch of students if and only if a minimum of 10 eligible students opt for it.
- v) The student is required to earn an additional 20 credits (*over and above the total of 160 credits prescribed in the curriculum*) starting from the third semester onwards to become eligible for the award of minor degree. 20 credits shall be earned by the student by completing 5 additional courses of 4 credits each, one in each of the 5 semesters starting from third to seventh

semester. The curricular content of these 5 courses are so framed that these courses will essentially cover the core minimum knowledge required to be fulfilled for award of degree in the discipline of engineering in which the student chooses to earn the minor degree.

- vi) The students admitted in the second year through *Lateral Entry Scheme* will also be given a chance to opt for *Minor degree*. Eligibility to avail this option is *CGPA of 7.5 and above with no arrears in the Third Semester*. The student will join the existing batch of students in the fourth semester and earn 16 credits by registering for prescribed courses offered up to seventh semester. The respective BoS will decide on a suitable course *in lieu* of the course offered in the third semester to facilitate the student to earn the remaining 4 credits.
- vii) A student can exercise the option to withdraw from the Minor degree at any time after entry.
- viii) Details about the courses completed and credits earned for Minor degree will appear only in the '*Eighth Semester Grade Card*' and '*Consolidated Grade Card*'. These details will be listed under the heading '*Credits Earned for Minor degree*'. In the case of students who withdraw from Minor degree, the credits earned for the courses registered and successfully completed for Minor degree will be listed under the heading '*Additional Credits Earned*'.
- ix) Nomenclature of Minor Degree is '*B.Tech. in XXX with Minor in YYY*', where XXX is *Degree in which the student is enrolled* and YYY is *Degree which the student has opted as Minor*.

#### 6.23 Minor Degree in Entrepreneurship

- i) The student shall be given an option to earn a minor degree in Entrepreneurship at the end of first year based on his academic performance in the first year.
- ii) A student is eligible to exercise this option if he has passed all the subjects offered in the first year in the first attempt itself and has earned a CGPA of not less than 7.5.
- iii) Number of students who are admitted in the second year to the minor degree in Entrepreneurship shall be limited to 40.
- iv) Minor degree in entrepreneurship shall be offered for a batch of students if and only if a minimum of 10 eligible students opt for it.
- v) The student is required to earn an additional 20 credits (*over and above the total of 160 credits prescribed in the curriculum*) starting from the third semester onwards to become eligible for the award of minor degree in Entrepreneurship. These 20 credits shall be earned by the student by completing 5 additional courses of 4 credits each, one in each of the 5 semesters starting from third to seventh semester.
- vi) The students admitted in the second year through *Lateral Entry Scheme* will also be given a chance to opt for *Minor degree in Entrepreneurship*. Eligibility to avail this option is *CGPA of 7.5 and above with no arrears in the Third Semester*. The student will join the existing batch of

students in the fourth semester and earn 16 credits by registering for prescribed courses offered up to seventh semester. The respective BoS will decide on a suitable course *in lieu* of the course offered in the third semester to facilitate the student to earn the remaining 4 credits.

- vii) A student can exercise the option to withdraw from the *Minor degree in Entrepreneurship* at any time after entry.
- viii) Details about the courses completed and credits earned for *Minor degree in Entrepreneurship* will appear only in the '*Eighth Semester Grade Card*' and '*Consolidated Grade Card*'. These details will be listed under the heading '*Credits Earned for Minor degree in Entrepreneurship*'. In the case of students who withdraw from Minor degree in Entrepreneurship, the credits earned for the courses registered and successfully completed for Minor degree in Entrepreneurship will be listed under the heading '*Additional Credits Earned*'.
- ix) Nomenclature of Minor Degree in Entrepreneurship is '*B.Tech. in XXX with Minor in Entrepreneurship*', where XXX is *Degree in which the student is enrolled*.

6.24 An eligible student is permitted to earn only one of these degrees in addition to the degree in his own discipline of engineering – (i) Honours degree in the same engineering discipline (ii) Minor degree in another engineering discipline (iii) Minor degree in Entrepreneurship.

## 7. ASSESSMENT

### 7.1 Theory Courses

- i) All theory courses shall be assessed as follows:

Assessment Method	Marks
Continuous Assessment	40
Semester Examination	60
Total	100

- ii) Continuous Assessment shall be based on attendance, cycle tests and assignments. Attendance carries 5 marks (5 marks for 100% to 95% attendance, 4 marks for 94% to 90% attendance, 3 marks for 89% to 85% attendance, 2 marks for 84% to 80% attendance and 1 mark for 79% to 75% attendance), cycle test carries 25 marks. Performance in the best two of the three tests will be taken for assessment. Assignments carrying 10 marks, shall be in the form of problems, small projects, quizzes, design problems etc., depending upon the subject content.

- iii) The pattern of *Semester Examination* question paper for theory courses is as follows:
- The duration of examination shall be 3 hours with a maximum of 60 marks.
  - Section-A contains 5 compulsory questions each carrying 2 marks. Only one question shall be selected from each unit. This section carries 10 marks in total.
  - Section-B contains five questions, one question from each unit with '*either*' '*or*' choice. Each question carries eight marks. Based on necessity, each question may contain sub divisions. This section carries 40 marks in total.
  - Section-C contains one question of problem solving type (application of theoretical concepts) with '*either*' '*or*' choice. This question may be from any one unit or combination of units. Based on necessity, each question may contain sub divisions. This section carries 10 marks.
- iv) The pattern of *Semester Examination* question papers for the first year course '*Engineering Graphics and Computer Aided Drawing*' and for similar courses is as follows:
- The duration of examination shall be 3 hours with a maximum of 60 marks.
  - The question paper shall contain five either or type of questions, one question from each unit. Each question carries 12 marks. Based on necessity, each question may contain sub divisions.

## 7.2 Practical Courses:

- i) All practical courses shall be assessed as follows:

Assessment Method	Marks
Continuous Assessment	40
Semester Examination	60
Total	100

- ii) *Continuous Assessment* shall be based on attendance, regular performance of the student in practical classes and a model examination conducted at the end of the semester. Attendance carries 5 marks (5 marks for 100% to 95% attendance, 4 marks for 94% to 90% attendance, 3 marks 89% to 85% attendance, 2 marks for 84% to 80% attendance and 1 mark for 79% to 75% attendance). The regular performance in the practical class (*Observation and Record*) will be evaluated for 25 marks. Performance in the Model examination will be evaluated for 10 marks. The pattern of *Model Examination* will be similar to the *Semester Examination*.
- iii) The *Semester Examination* of the practical courses will be evaluated for 60 marks by a panel of examiners comprising of an internal examiner and an external examiner. The Break-up of marks is as follows:

Procedure	: 10 marks
Practical work and calculations	: 40 marks
Viva-Voce	: 10 marks

### 7.3 Project Work

i) The Project work carried out in the eighth semester shall be assessed as follows:

Assessment Method	Marks
Continuous Assessment (Internal Evaluation)	60
Semester Examination (External Evaluation)	40
Total	100

ii) Marks allocated for *Continuous Assessment* are distributed as given in the following table.

Assessment Method	Marks
Guide	25
Project Evaluation Committee	35
Total	60

a) Guide shall evaluate the student for 25 marks based on the work carried out.

b) The Project Evaluation Committee comprising of the Head of the Department or his nominee (Chairman), Project coordinator (Professor/Associate Professor) and two other faculty members shall evaluate the project for 35 marks. The evaluation will be carried out through three reviews. The Project Evaluation Committee is constituted by the Head of the Department.

iii) The final *Semester Examination* of the Project Work will be conducted by a panel of examiners comprising of an internal examiner and an external examiner. The Break-up of marks is as follows:

Project report	: 15 marks
Presentation	: 15 marks
Viva-Voce	: 10 marks

### 7.4 Comprehensive test :

i) The evaluation of 'Comprehensive test' is through internal assessment only (continuous assessment)

ii) Comprehensive test is conducted through an objective type examination of three hours duration. The test shall carry 100 marks and cover the syllabi of all core courses. The question paper shall

contain 50 question of two marks each. The questions shall be framed to test the critical thinking of the students and of the standard of any national level competitive examination. A committee comprising of two faculty members will coordinate the conduct and evaluation of the comprehensive test. The Head of the Department shall constitute this committee and take the approval of the Controller of Examinations.

### 7.5 Internship

- i) The evaluation of 'Internship' is through internal assessment only (continuous assessment).
- ii) A committee comprising of two faculty members will assess the internship for 100 marks, by evaluating the internship report and the oral presentation by the student. The Head of the Department shall constitute this committee and take the approval of the Controller of Examinations.

### 7.6 Seminar

- i) The evaluation of 'Seminar' is through internal assessment only (continuous assessment).
- ii) A committee comprising of two faculty members will coordinate the conduct and assessment of seminar. The seminar is assessed for 100 marks covering the seminar report, presentation and discussion. The Head of the Department shall constitute this committee and take the approval of the Controller of Examinations.

### 7.7 Mandatory non-Credit Courses:

- i) The evaluation of 'Mandatory non-Credit Courses' is through internal assessment only (continuous assessment)
- ii) The teacher/subject coordinator handling the course will assess the student through activities, quizzes and debates and declare the student as "pass" on satisfactory completion. A letter grade "P" is awarded to declare pass.

## 8 DECLARATION OF RESULTS

### 8.1 Examination Passing Criteria:

- i) A student is declared to have **passed** in a course if he gets 40% marks and above in the Semester Examination and 50% marks and above overall (Semester Exam marks and Continuous Assessment marks put together).
- ii) If a student fails to clear the semester examination of a theory course after three consecutive attempts, the passing criteria from the fourth attempt onwards will be based on the marks earned by the student in the end semester examination only. The student is deemed to have passed the course if the mark scored in the end semester examination is 50% and above and he will be awarded only **E grade** irrespective of the mark scored.



**8.2 Result Passing Board:** The Controller of Examinations shall constitute a **Result Passing Board** for each branch of study. The *Result Passing Board* shall meet soon after the valuation of Semester examination answer scripts to analyse the relative performance of students and award appropriate grace marks, if necessary, for overall improvement in the result. On finalization of the results by *Result Passing Board*, the Controller of Examinations shall declare the results.

**8.3 Photocopy of the Answer Script and Revaluation:**

- i) After declaration of results, photocopy of valued answer scripts with the marks awarded to individual answers shall be made available to the students on submission of an application along with the prescribed fees to Controller of Examinations.
- ii) Students can get their answer scripts revalued by submitting an application along with the prescribed fees to the Controller of Examinations.
- iii) The provision for getting the photocopy of valued answer scripts and revaluation is extended to all the students including those who have passed the examination.
- iv) The Controller of Examinations shall get the answer script revalued by appointing an examiner other than the one who has valued the script earlier and revise the grade accordingly.
- v) The marks obtained after revaluation will be taken as final irrespective of the marks awarded earlier. That is, if the marks obtained after revaluation happens to be lower than the original marks then '*the lower mark*' will be considered for the award of revised grade.

**8.4 Grade Card:** On declaration of results, Grade Cards will be issued to the students. The Grade Card will contain the list of courses for that semester, the grades obtained by the student, the GPA and the CGPA.

## **9 AWARD OF GRADES**

9.1 The performance of students in a course is expressed in terms of Letter Grades, each carrying certain Grade Points. A total of Six passing Grades namely S, A, B, C, D and E is awarded. Total marks (*sum of Continuous Assessment and Semester Examination marks*) secured by a student in a course is used for computing his Grade by fitting the mark into the Range of Marks assigned for each Grade shown in the table below.

<b>Range of Marks</b>	<b>Letter Grade</b>	<b>Grade Points</b>
90 to 100	S	10
80 to 89	A	9
70 to 79	B	8
60 to 69	C	7
55 to 59	D	6
50 to 54	E	5
0 to 49 (Failed)	F	0

The other Letter Grades that shall be indicated in the Grade Card are as follows:

Criterion	Letter Grade	Grade Point
Failed to Score Pass Mark in the Subject	F	0
Partial Withdrawal from Semester Examination	W	-
Audited the Course	X	-
Pass in Mandatory non-Credit Course	P	0
Absent for the semester examination	Z	0

'F' grade denotes failure in the course, 'W' grade indicates authorized partial withdrawal (*vide Regulation 13.2*), 'X' Grade denotes that the student has audited the course and 'Z' grade denotes absent for the Semester Examination. 'P' grade is assigned for satisfactory completion of a Mandatory non-Credit Course.

9.2 A student who has secured 'F'/'W'/'Z' grade shall reappear for the examination in the following semesters. A student who has scored a pass grade cannot reappear for the examination.

9.3 A student securing 'F' grade in an elective course may reappear for the examination in the following semester or drop the elective course and subsequently register for another elective course in the following semester in place of the dropped elective course.

9.4 *Grade Point Average* (GPA) indicates the performance of a student in all the examinations appeared by him in a particular semester. GPA score will appear in all the Semester Examination Grade Cards. The *Grade Point Average* (GPA) for a particular semester is calculated as the ratio of the sum of the products of the number of Credits of a course ( $C_i$ ) and the Grade Points scored in that course ( $GP_i$ ), taken for all the courses, to the sum of the number of credits of all the courses ( $n$ ) registered in that semester.

$$GPA = \frac{\sum_1^n C_i GP_i}{\sum_1^n C_i}$$

where,  $n$  is the number of courses registered in that semester. For a student who has partially withdrawn from writing examinations of courses in a semester,  $n$  is counted as total number of courses appeared in that semester minus the number of courses partially withdrawn.

9.5 *Cumulative Grade Point Average* (CGPA) indicates the performance of a student in all the examinations appeared by him up to a particular semester. CGPA score will appear in all the

Semester Examination Grade Cards starting from the first semester. The *Cumulative Grade Point Average* (CGPA) up to a particular semester is calculated as follows:

$$CGPA = \frac{\sum_{i=1}^N C_i GP_i}{\sum_{i=1}^N C_i}$$

where,  $C_i$  is the Credit of a course,  $GP_i$  is the Grade Point obtained by the student in that course and  $N$  is the total number of courses registered up to that semester starting from the first semester. For a student who has partially or completely withdrawn from writing examinations of courses in a semester,  $N$  is counted as total number of courses registered up to that semester starting from the first semester minus the number of courses withdrawn.

9.6 *Scheme for conversion of CGPA to Percentage (%) marks*: There are some employers / institutions that require the students to provide the details of the percentage (%) of marks scored in the semester examination / degree programme. In this regard, a scheme to convert the Cumulative Grade Point Average (CGPA) to Percentage (%) of marks is shown below:

$$\text{Percentage (\%)} \text{ marks} = (\text{CGPA} - 0.5) \times 100$$

## 10 REGISTRATION AND ENROLLMENT

10.1 All the students of the B.Tech. programme shall register for the courses during a specified period in the beginning of the semester provided he fulfills the eligibility criteria prescribed for enrollment and for registration of courses in that particular semester.

10.2 A student will be eligible for enrolment only if he has cleared all the dues to the Institute, Hostel, and Library up to the end of the previous semester and not had been debarred from enrolment by disciplinary action committee of the Institute.

10.3 List of students enrolled in a particular semester of a branch of study shall include

- i) Students who rejoin the programme after temporary break (*vide Regulation 14*)
- ii) Students who rejoin the programme after having been stopped from moving to higher semester due to non-fulfillment of attendance requirement (*vide Regulation 15*)
- iii) Students who are otherwise eligible for enrollment (*vide Regulation 10.2*)

10.4 **Pre-Registration**: Open Elective courses will be offered in every semester starting from third semester to seventh semester. In order to facilitate proper planning of open elective courses to be offered in a semester, it is essential for the students to *declare their intent to register* for an open elective course well in advance, before the actual start of the semester classes, through the process of *Pre-Registration*. A list of open elective courses offered in the next higher semester will

be made available to the students one week before Pre-Registration. A student can choose the open elective courses in consultation with the concerned *Faculty Adviser (vide Regulation 19.1)*.

**10.5 Dropping of Courses:** After completing the registration of courses for a particular semester, if for some reason a student wants to drop the open elective course, he can do so within three weeks of the commencement of the semester with the written approval of the Faculty Adviser and the Head of the Department. However, a student is not permitted to drop the core courses or professional elective courses.

## **11 TRANSFER OF CREDITS**

The courses credited in other higher learning institutions by students during their study period at Pondicherry Engineering College may count towards the credit requirements for the award of degree. The credits thus transferred will reduce the number of courses to be registered by the student at Pondicherry Engineering College. The guidelines for the transfer of credits are as follows:

**11.1** Students with consistent academic performance (*having a CGPA of 7.5 or above and no arrear*) can credit courses in other institutions during third and fourth year with the approval of the Academic Council of Pondicherry Engineering College

**11.2** Students can earn external credits only from higher learning institutions with which Pondicherry Engineering College has entered in to MoU (*and MoU must have a specific clause for provision of credit transfer*)

**11.3** The BoS of the concerned department shall evaluate all the details of a course such as course contents, number of contact hours, course evaluation system, and approval or acceptance letter from the other institution and decide the *Equivalent Course(s)* in Pondicherry Engineering College curriculum and the number of *Equivalent Credits* the student earns for the course. The BoS shall also evolve a method for calculating the *Equivalent Grades* for the credit transferred courses by taking into account the course evaluation system followed in the other institution. The BoS shall issue a *Credit Transfer Certificate* mentioning in it the details of *Equivalent Courses*, corresponding *Credits* and *Equivalent Grades* for the credit transferred courses. The complete details will then be forwarded to the Dean (Academics), who in turn will place it in the Academic Council for approval

**11.4** Credits and the Grades earned by the student under this Credits Transfer scheme will be reflected in the corresponding *Semester Grade Card (vide Regulation 8.4)* issued by Pondicherry Engineering College by entering the *Equivalent Grades* for the credit transferred subjects

**11.5** Credit transfer can be considered only for the courses at the Under Graduate level

**11.6** The maximum number of credits that can be transferred by a student shall be limited to 50

11.7 A student has to get minimum passing grade/marks for such courses for which the credits transfer are to be made

11.8 Credits transfers availed by a student shall be properly recorded in *Consolidated Grade Card (vide Regulation 17)* issued to the student

## **12 ELIGIBILITY FOR APPEARING FOR SEMESTER EXAMINATION**

12.1 There shall be not any adverse report regarding the conduct of the student to be eligible to appear for the semester examination.

12.2 Although 100% overall attendance in all the courses in a semester is desirable, a student should not have less than 75% overall attendance to become eligible to appear for the examination.

12.3 A student, whose overall attendance falls below 75% but 60% and above in a semester, shall be permitted only on medical grounds to appear for semester examination after payment of prescribed condonation fee along with a medical certificate obtained from a medical officer and duly acknowledged by the in-house medical officer of the College.

12.4 A student whose overall attendance in a semester falls below 60% shall not be permitted to appear for the semester examination and shall not be allowed to move to the next semester (*vide Regulation 15*). A student who is stopped from moving to the higher semester is required to rejoin the course in the same semester in the following academic year.

## **13 WITHDRAWAL FROM SEMESTER EXAMINATION**

13.1 **Complete Withdrawal:** A student, who is otherwise eligible to appear for the semester examinations, will be permitted to withdraw from appearing for the entire Semester Examination as one unit (*Complete Withdrawal*) for valid reasons and on the recommendation of the Head of the Department and with the approval of the Dean (Academics). Complete Withdrawal application shall be made before the commencement of the first examination pertaining to the semester. Such withdrawal shall be permitted **only once** during the entire programme.

13.2 **Partial Withdrawal:** If a student falls sick in the middle of the Semester Examinations, he can withdraw from one or more subjects on production of valid medical certificate (*Partial Withdrawal*). The student is permitted to exercise this provision of partial withdrawal from the courses in the middle of the semester examinations **only once** in the entire course.

13.3 A student who has partially or completely withdrawn from appearing for semester examinations in a particular semester should appear for the examinations of all the withdrawn subjects in the next semester itself.

- 13.4 Other conditions being satisfactory, students who withdraw from semester examinations are eligible to be awarded *First Class with Distinction* whereas they are not eligible to be awarded a rank.
- 13.5 Only a student who has not failed in any subject in all the previous semesters (*eligibility condition for 'First Class with Distinction' classification*) is eligible to opt for the Withdrawal from the semester examinations.
- 13.6 The provision for withdrawal (complete/partial) is allowed only for third to seventh semester examinations.

#### **14 TEMPORARY BREAK OF STUDY FROM THE PROGRAMME**

A student may be permitted to withdraw temporarily from the programme for medical reasons subject to production of medical certificate. A student after temporary discontinuance may rejoin the programme at the commencement of the semester at which he discontinued. However, the total period for the completion of the course, reckoned from the commencement of the first semester to which the student was admitted, shall not in any case exceed seven years (*six years for lateral entry students*), including the period of authorized temporary discontinuance.

#### **15 MOVEMENT TO HIGHER SEMESTERS**

- 15.1 A student can move to the next semester provided he has fulfilled the minimum attendance requirement for appearing in the semester examination (*vide Regulation 12*).
- 15.2 The student who has failed to fulfill the above conditions will not be permitted to move to the higher semester, and shall rejoin the programme only after a temporary break.
- 15.3 A student, after the temporary break, will be permitted to rejoin the programme at the appropriate semester along with the regular students at the time of normal commencement of that semester.
- 15.4 A student who rejoins the programme after the temporary break shall be governed only by the rules, regulations, courses of study and syllabus in force, at the time of his rejoining the course.

#### **16 CLASSIFICATION**

After successful completion of the programme, degree will be awarded (*vide Regulation 18*) as per the following classifications based on the final CGPA:

- 16.1 Students who have successfully completed the programme within eight consecutive semesters (*six consecutive semesters for lateral entry students*) and obtained a final CGPA of **8.5** or above by passing all the courses from first to eighth semester in the *first attempt* will be declared to have

passed in **First Class with Distinction**. Students who have secured a final CGPA of 8.5 or above but failed to clear the courses offered from first to eighth semester in the first attempt are not eligible for **First Class with Distinction** classification. However, those students who have opted for authorized withdrawal from examination (*vide Regulation 13*) or temporary break of study (*vide Regulation 14*) will be eligible for **First Class with Distinction** classification.

16.2 Students who have obtained a final CGPA of **6.5** or above, but below **8.5**, shall be declared to have passed in **First Class**. Students who have lost the eligibility for **First Class with Distinction** classification by failing to clear the courses offered from first to eighth semester in the first attempt but securing a final CGPA of 8.5 or above shall also be declared to have passed in **First Class**.

16.3 Students who have obtained final CGPA below **6.5** will be declared to have passed in **Second Class**.

16.4 **Three Ranks** will be awarded in each branch of study in the order of merit among the students who are declared to have passed in **First Class with Distinction**. However, a student who has passed in First Class with Distinction after availing the provision of 'Withdrawal from Examinations' (*vide Regulation 13*) is not eligible for award of Rank.

## **17 CONSOLIDATED GRADE CARD**

At the end of the programme, all successful students will be issued a consolidated *Grade Card* which will necessarily contain the following particulars in addition to any other relevant information:

- 1) Details of *Honours degree* and *Minor degree* along with courses completed and grades earned for the students who opted
- 2) Grades in the subjects of all the semesters with month and year of passing
- 3) CGPA
- 4) Classification - First class with Distinction/First class/Second class

## **18 ELIGIBILITY FOR THE AWARD OF DEGREE**

A student shall be eligible for the award of the degree of the Bachelor of Technology (B. Tech) only if he has

- 1) earned the specified number of credits and fulfilled all other requirements prescribed in the regulation within the maximum duration of the programme
- 2) no dues to the Institution, Library, Hostels, etc.,
- 3) no disciplinary proceeding pending against him.

## **19 FUNCTIONARIES AND COMMITTEES**

### **19.1 FACULTY ADVISOR**

In the first year, the students in every class will be divided into three groups, with each group having around 20 numbers of students. One *Faculty Advisor* will be attached to each one of the

groups of students. The faculty advisor, who is a faculty from the parent department, will play a proactive role in closely monitoring the academic performance, attendance and discipline of the students, attached to him. Further, the faculty advisor will help the students in planning their courses of study, and render general advice regarding the academic programme or any other activity. The set of students attached to a Faculty Advisor will continue to be under the guidance of the same Faculty Advisor, till they complete the programme.

### 19.2 CLASS ADVISOR

One of the course instructors of a class shall be designated as the *Class Advisor* for that class. The class advisor shall keep track of the general academic performance, discipline and attendance of the students in the class. He will act as a *liaison officer* between the class and the HoD. He shall act as the convener of the Class Committee and minute the proceedings of the class committee meetings. He shall assist the HoD in implementing the suggestions and recommendations of the class committee for improving the overall teaching-learning process in the class.

### 19.3 CLASS COMMITTEE

Every class shall have a class committee consisting of four students (two girls and two boys) from the class, all the faculties handling the subjects for the class, and the Head of the Department, who will be the chairperson of the class committee. One of the faculties will be designated as the **Class Advisor** and shall act as the convener of the committee. The first year coordinator shall be the Chairperson for the class committee of the first year classes. The class committees shall be constituted by the respective Head of the Department/the first year coordinator in the first week of the semester and communicated to the Dean (Academics). The class committee shall meet thrice during the semester. The first meeting will be conducted within three weeks from the date of commencement of the semester to discuss the nature of cycle tests, assignments, and assessment procedure. The second and third meetings will be held soon after the declaration of first and second cycle tests respectively to analyse the test performance and discuss various measures for improving the overall performance of students. The committee will also look into the regularity of the classes held, attendance of the students, and express opinions and suggestions on the improvement of teaching-learning process.

### 19.4 ACADEMIC COURSES COMMITTEE

The Academic Courses Committee is an internal academic body constituted by the Principal with Dean (Academics) as Convener, Associate Deans (Academics), Controller of Examination and all Heads of the Departments as members. The Convenor will chair the meetings of Academic Courses Committee.



The role of the committee is as follows:

- 1) Discuss and deliberate on the general framework of curriculum and syllabi for various branches of study
- 2) Discuss and deliberate on any amendments in the curriculum, syllabi and regulations before placing it in the Board of Studies/Academic Council for approval
- 3) Approve the consolidated list of Open Electives offered in an academic year
- 4) Approve the list of Online Courses and the assessment criteria
- 5) Discuss and deliberate on any other academic matter, on the direction of the Principal

The Academic Courses Committee will meet as and when required. The decisions taken in the meetings of the committee are subject to the approval of the Principal.

#### **19.5 ACADEMIC APPEALS BOARD**

The entire process of Continuous Assessment shall be made transparent, and the course instructor shall explain to a student why he gets whatever marks awarded, if and when required. However, if a student finds some anomaly in the award of marks in the continuous assessment, he can make an appeal to the *Academic Appeals Board* for review of marks awarded. Before appealing for such review, a student shall first approach the concerned Course Instructor and then the concerned Head of the Department, with a request to do the needful. Only after exhausting the above options and in situations where satisfactory actions / remedial measures have not been taken, the student may appeal to the Academic Appeals Board. The Academic Appeals Board is constituted with Dean (Academics) as convener, Associate Deans (Academics) and one senior level professor as members, and the concerned Head of the Department and Class Advisor as co-opted members. The board will receive the grievance/complaints in writing from the aggrieved student regarding anomaly in award of marks. The board will examine the complaints and recommend appropriate measures to the Principal, for necessary action.