PANDIT DEENDAYAL ENERGY UNIVERSITY

(Formerly Pandit Deendayal Petroleum University)

Academic Rules for B.Tech. Programmme

(For students studying in the batch of Admission Year 2024 and onward)

[1] SEMESTER SYSTEM

An academic year consists of two semester's viz. the autumn (odd) semester generally from July to November & the spring (even) semester generally from December to April. During the teaching break/vacation period the Rural Internship Civic & Social Service Internship, and various other internships, exposure, orientation, training etc. as the case may be are carried out.

[2] ELIGIBILITY AND ADMISSION CRITERIA

2.1 For admission as All India Seat candidate and/or as NRI Sponsored candidate:

A candidate must have secured rank in JEE (Main) in the same year admission.

AND

A candidate should have passed the Qualifying Examination with minimum 45% marks (40% in case of SC / ST) in aggregate in theory and practical of Physics & Maths (with Chemistry or Vocational Subject as per the guidelines of ACPC) from single board.

2.2 For admission as NRI Candidate:

2.2.1 Candidate must have passed the qualifying examination abroad with minimum 45% marks (40% in case of SC / ST) in aggregate in theory and practical of Physics, Chemistry, and Mathematics; and also must have passed:

SAT Subject Tests (SAT II) of level-II Physics, Mathematics, & Chemistry

OR

AP tests at A-levels in Physics, Mathematics & Chemistry

OR

Equivalent standard examination of United Kingdom (UK) education system in Physics, Mathematics, & Chemistry

OR

JEE (Main) in the year of admission

2.2.2 In case, Letter Grade / Performance Index or Graded Point Average is awarded instead of percentage marks in qualifying examination, the equivalence certificate is required from the school authority.

2.2.3 Such candidate will have to produce equivalence certificate of qualifying examination from Association of Indian Universities (AIU), New Delhi.

Important Note: *For B.Tech. (Biotechnology) a student from the Gujarat* ***can also apply*** *with PCB (Physics – Chemistry – Biology) on the basis of GUJCET (Must have appeared in the same year of admission). All above eligibility criteria are also applicable for admission in B.Tech. (Biotechnology).*

[3] REGISTRATION

Registration should be done at the beginning of each semester on the prescribed dates announced in the academic calendar. Registration is mandatory for every student until they complete their program. Without registration, student is not allowed to attend a course. In case of compelling reasons, the school provides for late registration, whereby a student is allowed to register after the last date of registration on payment of a prescribed fine. The student registers for course(s) during a given semester, based on the program as prescribed in the Curriculum.

Only those students can attend the academic sessions as per the class timetable of a semester who fulfill the eligibility criteria for admission to the respective semester. The semester fees paid by a student shall be valid for admission/registration to the respective semester only upon the fulfillment of the eligibility criteria for the same.

Only under exceptional situations a student can register/re-register for a semester, after the prescribed date of commencement of the semester, but in no case later than a month to it.

Procedure for Registration

Registration is done in person, normally on the first day of each semester, for which the schedule is announced in advance. Students having outstanding dues to the school or hostel will not be permitted to register. If a student fails to register during any semester, their studentship may be cancelled.

[4] CURRICULUM - COURSES, SEMINAR, PROJECTS

The program has a prescribed course structure, known as the academic architecture of the program that specifies the course titles, credits of the course, contact hours of lectures, tutorials, and practical which are offered in each semester of the program.

The types of courses specified in the academic architecture are**:**

1) Courses having theory only
2) Courses having practical only
3) Courses having theory and tutorials
4) Courses having theory and practical
5) Courses having theory, tutorials, and practical

The credit (C) for a course is dependent on the number of hours of instruction per week in that course. The number of credits is obtained by using a multiplier of one (1) for lecture hours, one (1) for tutorial hours, and half (1/2) for laboratory hours. Thus, for example, a course having the structure of two lectures and one tutorial per week carries 3 credits and is designated as 2(L)-1(T)-0(P)-3(C) or simply as 2-1-0-3.

Separate credits are specified for Industrial Internship, Industrial Orientation, Rural Internship / Civic and Social Service Internship, Seminar, and Major / Comprehensive Project as the case may be. Industrial Orientation is a part of the study where the students need to visit 2-3 industries relevant to the respective discipline.

Seminar is a course requirement wherein under the guidance of a faculty member a student is expected to carry out an in-depth study in a specialized area through study, literature survey, understanding different aspects of the problem, and writing a report. A student is required to present the seminar report before an examiner panel constituted for the purpose.

A student has to fulfill the credit requirement for a Major / Comprehensive Project in the 8th Semester. Guidelines for Major / Comprehensive Project are given in Annexure I.

National Cadet Corps (NCC) / National Service Scheme (NSS) / Yoga, Health and Hygiene (YHH) is offered in the First Year. Students must register for either of these courses (NCC / NSS / YHH) during the First Year. The choice will be made based on the aptitude of the student for any of these activities. This requirement must be completed before the start of the second year.

The AICTE has permitted the Universities to offer minor specialization in emerging areas in the undergraduate degree programs. Accordingly, a student shall take the minimum additional credits (over and above the total credit requirements to complete the degree program) in the range of 18-20 additional credits and get a degree with a Minor Specialization. The detail guidelines for the minor specialization are given in Annexure - II.

[5] EVALUATION SYSTEM

(i) To assess the academic performance of students, a continuous evaluation system is followed. At the end of each semester, each student is awarded a letter grade in each of their courses by the concerned instructor, based on their performance in mid-semester examination, end-semester examination, internal assessment (quizzes, tests, assignments, tutorials, seminars, projects, etc.), and also on the basis of attendance in regular classes.

(ii) The assessment in a laboratory course is based on turn-to-turn supervision of the student's work, performance in viva voce examinations, and group discussions, the quality of work as prescribed through laboratory journals and an end-semester test that contains an experiment and / or a written examination. **The teacher will announce the mode of evaluation and distribution of marks at the beginning of the course**. It is obligatory to maintain a laboratory journal as prescribed by the course instructor. End-semester practical examinations for laboratory course are normally held at the end of the term before the final theory examination.

(iii) The percentage allocation for evaluating a theory course will generally remain as given below**:**

- ❖ 25% for the Internal Assessment that maybe conducted in the form of some components like a quiz, a short test, an assignment, project, viva, responsiveness in classroom, attendance, etc.at least three components should be used
- ❖ 25% for Mid Semester Examination
- ❖ 50% for End Semester Examination

(iv) The percentage allocation for evaluating a practical course will generally remain as given below**:**

- ❖ 50% for the laboratory work and 50% for the laboratory related examination.

(v) The students' evaluation for theory and practical will be carried out separately wherever theory and/or practical components involved in the teaching scheme in a course / subject, wherein the grade for theory will include the performance in the mid semester examination, end semester examination, class quiz, assignments and such other components as the case may be. Similarly the grade in a practical course will include the performance in the practical exams, term work, laboratory assignments, laboratory quiz and such other components as the case may be.

(vi) If a student remains absent in any component of evaluation other than the end semester examination, his final grade will correspond to the total of weighted marks they would have obtained in remaining components of evaluation he appeared at.

(vii) For the students failed in a course, the resubmission and thereupon reevaluation of assignment etc. under component of internal assessment will be permissible at the subsequent re-examinations, but only for the courses pursued till December 2019.

(viii) The students are required to submit / appear for evaluation of every part of Internal Assessment (25%) of theory courses, only while pursuing the courses in the respective semester i.e. not after the End Semester examinations in any case. The marks for Internal Assessment of a course once finalized at the end of the semester shall be carried forward only, till he passes the course as a whole. This is applicable to the courses that the students undertake from the even semester of academic year 2019-20 and then onwards.

In view of this, the students are advised to be punctual and sincere for their best possible performance, especially for the Internal Assessment carrying 25% weightage.

(ix) The value of the final percentage marks after considering all the components of a course examination will be calculated in the integer value which is next to the fraction-point value e.g. 43.3 or 43.7 will be considered as 44 by the examiner.

(x) Where a student fails in a course examination, he may be graced by not more than 3% marks in final overall result of the course to pass it. A minimum requirement if any to pass in a component/s of a course evaluation shall have to be fulfilled without gracing.

The above referred scopes for gracing and calculating the marks in terms of the next integer are applicable only to the final/overall percentage result of a course examination.

(xi) In no case a change of marks/grades in the result of a course examination will be acceptable after fifteen days once it is declared as per the academic calendar/scheduling. In case of exceptional cases, the recommendation of the Board of Examination will be considered.

(xii) The evaluation carried out by an external institute when a student pursues any course/s there, will not be added into the evaluation score for the course examinations conducted by PDEU; for the reason of different evaluation patterns at other institution.

(xiii) The evaluation marks of the mid semester examination shall be carried forward only, till he passes the concerned theory course fully. (Sentence to be reframed)

(xiv) For the academic year 2020-21, the evaluation pattern for UG / PG programs of Engineering and of Liberal Studies will be as follows for the reason of the constraints posed by COVID19**:**

60% of the Internal Assessment Component, and
40% of the End Semester Component Theory examination.

The question paper of the end semester exam shall continue to be of 100 marks as usual. The students are required to score a minimum of 35 marks out of 100 in each of the end semester theory course examinations, subject to a minimum of 40% in the overall evaluation of the course to pass it as usual.

5.1 Letter Grades

Each course is assigned a numerical weightage termed as credits for that particular course. A letter grade is awarded to students as the final evaluation in each course, and each letter grade carries numerical points, known as grade points, as shown below**:**

Marks Obtained	Letter Grade	Grade Point
≥80	O (Outstanding)	10
70-79	A+(Excellent)	9
60-69	A(Very Good)	8

55-59	B+(Good)	7
50-54	B(Above Average)	6
45-49	C(Average)	5
40-44	P (Pass)	4
<40	F(Fail)	0
	NA/Ab (Absent)	0

In order to pass a course, it is required to score at least 40% of the maximum marks in the respective course examination. However to pass a theory course, it is required to obtain a minimum 35% of the maximum marks separately in its end semester examination, provided the total overall obtained is the minimum 40% of the maximum marks for the course.

A student passes the course if he gets any grade ranging from'O' to 'P' but fails if he gets the grade 'F' or 'NA/Ab'. A student is awarded fail grade 'F' if his performance in the course is poor. He is eligible for re-examinations per the next examination time-table announced.

The grade 'NA/Ab' is assigned to the students absent in the examination for any reason, as a mark of the absence.

5.2 Examinations

i) At the end of every Odd / Even semester, there will be examinations of all eight semesters together, i.e. the end semester examinations of the *current Odd / Even* semesters followed by the re-examinations for the *previous Even / Odd* semesters. The end semester examinations of *current Odd / Even* semesters will be held on alternate day and the re-examination of *previous even / odd* semesters will be held in between those alternate days. In other words, there would be one reexamination for the eligible students failed / not appeared in the End Semester exam.

   The examinations will be held on working days and if required may be conducted on holidays.

ii) Registration process, conducting examination etc. for re-examination is to be carried out as per the academic calendar, though a separate notice would be circulated, and the evaluation is to be carried out in the same manner as for regular semester courses.

iii) Generally, the examination question paper will be of 100 marks for 3 hours duration and of 50 marks for 2 hours duration.

iv) Students are not permitted to re-register or take re-examination for courses in which they have already obtained a pass grade or '**P', except particular provision mentioned if any in the rules.**

v) The number of attempts a student takes to pass the courses shall appear on the grade sheet/transcript.

vi) It is necessary for a student to complete all the experiments in a Laboratory / Practical course as a requirement to appear in the practical examination at the respective end semester / re-examination.

vii) If a student has been nominated / permitted / has participated at any off / on campus program / activity and if that activity falls along the dates of scheduled examinations and if he does not appear in the examination as per the schedule; he shall have to appear at subsequent examination as per the academic calendar, no separate / special exam shall be conducted in such cases.

5.3 In case of missing out to submit/appear for evaluation *(other than end sem. examination)*

If a student misses to submit/appear for evaluation of any component – except the End Semester examination in a course, due to personal illness or accident, or death or serious illness of the declared guardian / family member; the student can submit/appear for the same as per the procedure, but not after the semester end examinations. For this, the student shall have to apply along with the medical certificate duly approved by the Medical Officer of the University within seven working days to the completion of the respective examination, to**:**

(i) the respective teacher in case of evaluation related to assessment and practical so as to reappear for the said component as per the direction of the concerned teacher, and

(ii) the respective school admin in case of Mid Semester examination.

The list of the students to be permitted for the re-mid examination is to be sent to the Examination Cell from the School Admin, within ten working days to the completion of the examination.

5.4 Semester Performance Index (SPI) / Cumulative Performance Index (CPI)

Based on the grades and their numerical equivalents, Semester Performance Index (SPI) and Cumulative Performance Index (CPI) of the student are calculated at the end of each semester: SPI and CPI are calculated up to the second decimal.

SPI**:** The performance of a student at the end of every semester is evaluated in terms of the weighted average of grade points secured in all the courses for which the student registers in the semester, and is known as SPI.

CPI**:** It indicates the overall academic performance of a student in all the courses registered up to and including the last completed semester. It is computed in the same manner as the SPI, considering all the courses.

$SPI = \frac{\sum_{i=1}^{n} C_i \cdot G_i}{\sum_{i=1}^{n} C_i}$;

where Ci = Credits for the course i

Gi = Grade points obtained for the course i(O=10, A+=9, A=8, etc.)

n = Number of courses registered in a semester

$$CPI = \frac{\sum_{k=1}^{m} S_k \cdot C_k}{\sum_{k=1}^{m} C_k}$$

where m = total number of semesters under consideration
Ck = total number of credits registered for during a particular semester
Sk = SPI of the kth semester

Example**:** Suppose a student earns 210 Grade Points (SPI of 6.55) in semester 1 of total registered credits 32, and if he obtains the following grades in semester 2 of total registered credits 34; his SPI and CPI would be calculated in the following manner**:**

Course 1 (credit=4): B+, Course 2 (credit=7): B+, Course 3 (credit=5): B+ Course 4 (credit=5): C, Course 5 (credit=6): A+, Course 6 (credit=5): C, Course 7 (credit=2): B+. Thus the grade points earned in semester 2 are 230.

SPI = (4X7 + 7X7 + 5X7 + 5X5 + 6X9 + 5X5 + 2X7) / (4 + 7 + 5 + 5 + 6 + 5 + 2) = 230 / 34 = 6.76

CPI = (230 + 210) / (34 + 32) = 6.67

A separate statement of grades will be issued to the students for each examination in which he/she appears fully/partially.

5.5 Minimum Performance

The CPI at the end of the eighth semester has to be at least 5.00 upon passing all semester courses to be eligible for the award of B.Tech. degree.

5.6 Examination Grade Report

A separate statement of grades will be issued to the students for each examination in which they appear fully/partially.

5.7 Implications of a Fail Grade on CPI

CPI reflects all courses studied by the student including the courses if any wherein he has failed/ not appeared.

5.8 Disclosing the Evaluated Answer Books

The students can see their evaluated answer books including the assignments and such other documents related to the evaluation for all examinations with the Course Coordinator on the date/s specified by the faculty/teacher or as specified in the academic calendar as the case may be. Thereafter no claim regarding it shall be grantable.

5.9 Treatment of Malpractice / Unfair Means

The students found / reported for malpractice / using unfair means in an Examination / Re-examination / Assessment will be called in front of a special committee constituted for the purpose, which will recommend to the Director its decision about penalizing the concerned students. The Director's decision in such matters shall be final and binding.

5.10 Eligibility for Admission to the next Semester

Admission in Semester	Progression Criteria
I & II	- Not insisted
III	To be eligible for promotion to the THIRD Semester, a student should have successfully earned at least 50% of the cumulative credits from courses undertaken in the FIRST and SECOND Semesters combined.
IV	- Not insisted
V	To be eligible for promotion to the FIFTH Semester, a student should have earned 50% of the Cumulative Credits up to Sem.4
VI	- Not insisted
VII	To be eligible for promotion to the SEVENTH Semester, a student should have earned 50% of the Cumulative Credits up to Sem.6
VIII	- Not insisted

The conditions regarding the no. of 'F' grades are obviously inclusive of the NA/Ab grades.

A student having less than 50% overall attendance in a semester shall have to repeat the semester, only after which he can proceed to a higher semester subject to fulfillment of other conditions for it.

If a student having one or more backlog in a semester wants to repeat a semester completely, he may be permitted upon the approval of the School Director or faculty/staff nominated by the Director; subject to the nullification of all the previous academic data of the semester to be repeated. Rs.20,000/- shall have to be paid by the student as the tuition fees for repeating a particular semester.

If a student is re-registering/repeating a semester along with junior batch students, he shall then have to follow the academic rules applicable to the respective junior batch.

The students who have not been able to pass the concerned semester/s even upon its re-examination/s and consequently further if they are about to lose their one more year for not getting admitted in the respective higher semester (e. g.* fifth semester) may be permitted to admit into the same upon their request in the prescribed format, with the condition that they have to pass all the concerned previous semester/s and to fulfill all other relevant conditions by the end of the semester in which the admission is sought, upon appearing at the routine re-examinations as scheduled in

the academic calendar otherwise he shall not be eligible to move into the further higher semester (e.g.* sixth semester).

If a student opts for repeating a semester (i. e. re-registering for a semester) with his junior batch students, he has to repeat also all subsequent semesters (which he might have appeared /passed earlier) with the junior batch e. g. if a student has already appeared /passed in semester-3 and wants to repeat semester-2 with a junior batch, then he shall have to repeat semester-3 also, with the junior batch and so on.

[6] PERFORMANCE REQUIREMENTS

6.1 Award of Degree

For award of the B.Tech. degree in respective discipline, a student must fulfill the following requirements**:**

i) The student is required to have registered in and passed all the courses of semester I to Semester VIII as prescribed by the University in the Curriculum, within maximum period for completion of the programme.
ii) His/her CPI is equal to or more than 5.00.
iii) The student is required to have satisfactorily fulfilled other academic requirements such as internships, industrial orientation and training, NSS / NSO / NCC, work visits, seminar(s), and B.Tech. project as per specific program.
iv) The student is required to have paid all the university dues.
v) No pending case of indiscipline against him/her.

Although CPI will be shown in the semester grade reports and transcript, the final degree certificate will not mention any class. CPI of 6.5 or above is considered as First Class, and indicated accordingly in the transcript.

The Grade to Percentage conversion-formula devised from AICTE directive is as given below:

$$PERCENTAGE = \frac{(CPI - 0.5)}{0.1}$$

The students admitted during 2016 to 2019 years are required to pass the courses over all semesters earn minimum 180 credits on the basis of which the final CPI would be determined for the award of B.Tech. Degree. Minimum 177 credits are allocated to core, elective and foundation courses including training / internship / orientation and alike; over and above which three more credits will have to be earned by way of passing other special course like MOOC / Open Elective / EdX / Coursera Courses / NCC-B / NCC-C certificates offered by the School.

The students getting admitted in the academic year 2020-21 and onward are also required to pass the above mentioned other special course of 3 credits.

It is advised to the students to choose and pass above referred 3 credits - special course latest by the completion of 6th Semester, which can serve as a value addition to the placement which is largely held during 7th Semester.

A student is required to register in the School Admin office by applying in the prescribed form for such special course/s within 15 days to the start of the semester during which he/she desires to take up the course.

6.2 Minimum CPI for Award of Degree

At the end of the eighth semester, the minimum CPI required for the graduation is 5.0.

The pass out students can reappear in the ongoing course examination of junior batches, to earn minimum 5 CPI as per the following conditions:

i. The students who passed all courses of the programme but not earned minimum 5 CPI can reappear in the ongoing Theory course exams to earn minimum 5 CPI to become eligible for the award of the degree.

ii. The student desiring to appear in the examination has to apply in the prescribed form.

iii. No change of course/s or drop of course/s will be allowed after the registration of the courses to reappear.

iv. The improvement will be permissible for courses offered in Semester 5 to 8 as per exam calendar of junior batches and shall be limited to only theory courses.

v. Student can choose maximum any Seven (07) THEORY courses from semester 5 to 8 combined altogether to reappear in its examination.

i. Result grade will be changed only for the course/s in which the student gets a higher grade in the examinations. However in case of the student indulging in Unfair Means in the examination shall be penalized appropriately, and shall not deserve for maintaining the previous grade/s in the respective course/s examination/s.

vi. The final overall CPI of the students reappearing in the examinations shall be its actual value or 6.5, whichever is lesser.

vii. The result grade sheets of these examinations shall contain the result grade of only those course-examinations which can lead to the final overall CPI value not exceeding 6.5., and further will be mentioned therein as Grade Improvement Examination.

6.3 Provision to enhance overall CPI up to 6.5

The pass out students can reappear at the ongoing course examination of junior batches if they desire to improve their CPI as per the following conditions**:**

i. Such provision will be open for the students who have earned the CPI minimum 5 but less than 6.5 after passing all semesters examinations.

ii. The student desiring to appear in the examination has to apply in the prescribed form.

iii. At the time of registration student should surrender all the original grade sheets of semester 5 to 8. He/she should have to submit an affidavit on Rs.100/- judicial stamp paper that he/she will not do any use of the surrendered grade sheets. No change of course/s or drop of course/s will be allowed after the registration of the courses to reappear.

iv. Only one chance will be offered to reappear in a course examination. If the student misses to exercise this provision, no further chance will be given for the grade improvement.

v. This option can be exercised not later than one more academic year after passing all semester/s examinations. However, this provision cannot be exercised by the student once he/she is included in the list of degree recipients in the Convocation.

vi. This improvement examination will be permissible only for semester 5 to 8 as per its existing calendar wise examinations of junior batches for the students and further shall be limited to only theory courses.

vii. Student can choose maximum any Seven (07) THEORY courses from semester 5 to 8 combined altogether; to reappear in its examination, under this provision.

viii. Result grade will be changed only for the course/s in which the student gets a higher grade in the examinations. However in case of the student indulging in Unfair Means in the examination shall be penalized appropriately, and shall not deserve for maintaining the previous grade/s in the respective course/s examination/s.

ix. If a student does not appear at any such registered course exam/s, no any other special exam shall be conducted for such student.

x. The final overall CPI of the students reappearing in the examinations shall be its actual value or 6.5, whichever is lesser.

xi. The result grade sheets of these examinations shall contain the result grade of only those course-examinations which can lead to the final overall CPI value not exceeding 6.5., and further will be mentioned therein as Grade Improvement Examination.

xii. The students shall have to follow the procedure for the examination registration as and when announced by the examination office.

6.4 Maximum Period for Completion of Program

In any case, a student must fulfill the requirements of the B.Tech. degree within the maximum period of six years, excluding withdrawal in exceptional circumstances, failing which his case will be referred to the Academic Council for consideration.

6.5 Students with 'F' Grade in Courses

Students with F/NA/Ab Grades are required to register in person for Re-Examination. They should regularly meet and seek advice from the Faculty Adviser. Such students should continuously be in touch with parents about their performance.

6.6 Merit Medal Criteria

Please refer the Annexure - III

[7] FACULTY ADVISER

At the start of an academic programme, every student is assigned a Faculty Adviser. Students are expected to consult him on matters related to their academic performance and the courses they may take in various semesters. He can extend guidance to students, enabling them to complete their courses of study smoothly and satisfactorily. Parents/ Guardians should contact him for performance-related issues of their child.

The specific role of a Faculty Adviser includes:

- ❖ Guidance about the rules and regulations governing the courses of study;
- ❖ Special attention to weak students, including making revised plans of study for weak/ bright students based on their academic performance.
- ❖ Guidance and liaison with Parents of students for their performances.
- ❖ Emotional and adaptation issues

[8] INTERNSHIPS

Objectives:

Internships are educational and career development opportunities, providing practical experience in a field or discipline. They are structured, short-term, supervised tasks often focused around particular tasks or projects with defined timescales. An internship may be compensated, non-compensated or some time may be paid. The internship has to be meaningful and mutually beneficial to the intern and the organization. It is important that the objectives and the activities of the internship program are clearly defined and understood. Virtual Internships meeting below mentioned objectives in the present document can also be permitted provided the offering agency is a MNC or globally reputed and leading organization offering virtual Internships. Following are the intended objectives of internship training**:**

- Will expose Technical students to the industrial environment, which cannot be simulated in the classroom and hence creating competent professionals for the industry.
- Provide possible opportunities to learn, understand and sharpen the real time technical/managerial skills required at the job.
- Exposure to the current technological developments relevant to the subject area of training.
- Experience gained from the „Industrial Internship" will be used in classroom discussions.
- Create conditions conducive to quest for knowledge and its applicability on the job.

- Learn to apply the Technical knowledge in real industrial situations.

Internship Guidelines

- Gain experience in writing Technical reports/projects.
- Expose students to the engineer's responsibilities and ethics.
- Familiarize with various materials, processes, products and their applications along with relevant aspects of quality control.
- Promote academic, professional and/or personal development.
- Expose the students to future employers.
- Understand the social, economic and administrative considerations that influence the working environment of industrial organizations.
- Understand the psychology of the workers and their habits, attitudes and approach to problem solving.

Internship Types:

- **Civic & Social Service Internship (CSSI):** A student is required to undergo 3 weeks of Civic & Social Service Internship at the end of the second semester as partial requirement for the award of the degree.

- **Rural Internship:** A student is required to undergo 3 weeks of Rural Internship generally at the end of the first year of the B.Tech. program as partial requirement for the award of the degree.

- **Industry Orientation:** A student is required to undergo 3 weeks of Industry Orientation distributed along the 4th and 5th Semesters as partial requirement for the award of the degree. This would be at one or more related industry units.

- **Industrial Training:** A student is required to undergo 6 to 8 weeks of Industrial Training in the non-teaching period of the Third year of the B.Tech. Program as partial requirement for the award of the degree. This training can be carried out either in Industry, at an R&D organization, or at the School/Department of Universities as permitted by the School.

The comprehensive evaluation/examinations of every internship/training/orientation will be held after its completion.

The internships i.e. Rural/Ind. Orientation/Ind. Training will be held generally at the end of II, IV & VI Semester respectively. Report submission & Viva examination will be held at the start of subsequent odd semester. Its evaluation will be included in the result of end Semester examination of the respective odd semester or separately.

[9] ACADEMIC CALENDAR

All academic activities of the School are carried out in accordance with the annual Academic Calendar declared in the beginning of the academic year, which is made available to the all in print and / or electronic form.

[10] CONDUCT AND DISCIPLINE

10.1 General Instructions

a) The University attaches the utmost importance to strict integrity and honesty in all segments of academic work.

b) Any form of dishonesty including attempts to copy or help others copy in any manner is strictly prohibited. Unless specified otherwise by the teacher concerned, students must not collaborate/ syndicate in any manner in completion of home assignments and projects.

c) Canvassing for grades of the Examinations is strictly prohibited.

d) Penalty for breach of academic discipline includes expulsion from the University.

e) Marking proxy attendance for others or having attendance marked by others will attract severe punishment.

f) Cases of indiscipline or misconduct such as mass abstention from classes, irresponsible behavior inside or outside the classes, use of unethical practices during Internships, or violation of the rules and regulations of the Program will be severely dealt with.

g) The University reserves the right to impose fines for acts of indiscipline. In more severe cases, a student may be placed on Disciplinary Probation for a semester. Repetition of indiscipline during Disciplinary Probation may result in a student being expelled from the University for a semester or academic year.

h) In any case, where the result of an examination has been ascertained and published, and & it is prima facie found that such result has been affected by any malpractice, fraud or any other improper conduct on the part of a student, the Director General shall appoint an ad-hoc committee to examine the matter and seek its opinion. If the opinion of the said committee confirms the malpractice on the part of the student for seeking benefits, following the process of natural justice, the Director General shall amend the result as deemed necessary and order the withdrawal of the certificates/prizes/awards from the student.

i) In any case where the result of an examination has been ascertained and published, and it is found within six months from the date of declaration of the result that such result has been affected by an error or omission, the Director General shall have power to amend such result in such manner as shall be in accordance with true position and to make such declaration as deemed necessary in that behalf.

j) If a student has not paid the fees at any stage, or has dues pending due to any reason whatsoever, or if any case of indiscipline is pending, the result of the student may be withheld, and the student will not be allowed to enter into the next higher semester. The award of the degree may also be withheld in such cases.

k) When a student is genuinely disable to write the examination at their own, they can be provided the scribe, without compromising the sanctity of the examination e. g. scribe should not have the qualification higher than or relevant to the examination the disabled student going to write. Separate room under the staff observation is also provided for such students to write the examination conveniently with the support of the scribe. The scribe will have to follow just - what the disable student dictates to write the answers on his/her behalf in the examination. The scribe must have been approved by the Controller of the Examinations of the University.

10.2 Academic Conduct & Discipline

a) Every student shall conduct himself/herself in a manner befitting his association with an institution of national importance. He/She is expected not to indulge in any activity that is likely to bring down the prestige of the University.

b) He should also show due respect and courtesy to the teachers, administrators, officers and employees of the University, and good neighborly behavior to fellow students. Due attention and courtesy are to be paid to visitors to the University and residents of the campus.

c) Lack of courtesy and decorum, unbecoming conduct (both within and outside the campus), willful damage and/ or removal of the University's property or belongings of fellow students, disturbing others in their studies, adoption of unfair means during examinations, breach of rules and regulations, noisy and unseemly behavior, and similar other undesirable activities may result in Disciplinary Probation and expulsion/ dismissal from the University.

d) Every student, while on the university premises, should observe a decent civilized dress code.

e) Smoking and consumption of alcoholic drinks is strictly prohibited on the University Campus.

f) Ragging in any form is a criminal offence and is strictly prohibited.

g) Students are not permitted to run any commercial venture in or outside the University campus. They are also not permitted to associate/ help/ advise any organizations on a commercial basis and to receive any honorarium for the services rendered during their studies. They are free to work on the campus only if such an opportunity is provided by the University.

h) The students are required to keep themselves updated with different Notices, Circulars etc. & revisions in the rules if any from time to time informed through Email/Website/Notices. For this the students have to check their email Ids allotted to them through the University and also to check the University website/notice board regularly.

i) Impersonation/Forging of Signature in authorized documents is punishable offence and must be restricted.

j) Plagiarism in reports, dissertation and any other academic submission is strictly punishable and must be restrained.

k) Irregularity and indiscipline by the Teaching Assistant would be appropriately dealt with case to case basis.

l) All the students have to communicate, only on following School specific Email ID for the matters relevant to the respective School-Admin**:**

Sr. No.	E-mail ID	Relevant
1	admin.soet@pdpu.ac.in	For the students of SoET
2	admin.sot@pdpu.ac.in	For the students of SoT

10.3 Attendance

Attendance in scheduled classes for theory and laboratory courses is compulsory and will be monitored. Faculty members shall adopt appropriate measures to regulate attendance, penalize absence, and ensure smooth and undisturbed process of learning. A student with less than 80% attendance due to whatsoever reason, including medical ground and participation in extra-curricular activities, in a course will be barred by concerned faculty member from appearing in his/her course in the end-semester examination and given **F/NA** grade. The concerned faculty member shall notify in this regard.

With reference to the present rule for minimum 80% attendance requirement for appearing in the end semester examination, the respective faculty members are authorized by the University in condoning the absence of a student to an extent of 10% for his/her involvement under the faculty mentorship in organizing the institutional activities and/or for institutional representation outside the campus. For getting such condonation such student shall have to apply to the faculty members soon after resuming *from such activity* along with the evidences in support of his/her plea.

It is to be noted that only those students can attend the academic sessions as per the class timetable of a semester who fulfill the eligibility criteria for admission to the respective semester.

[11] SCOPE

These Academic Rules apply to various B.Tech. programs offered at the Faculty of Engineering and Technology (FoET) at Pandit Deendayal Energy University (PDEU), Gandhinagar. These shall apply to all students admitted to all B.Tech. programs during the academic year 2024-25. It is important to note that,

a) These Rules should be read as a whole, for any interpretation.
b) In the event of any ambiguity or uncertainty regarding the interpretation of these rules, the decision of the Director General, PDEU, shall be final.
c) The University reserves the right to change or amend these Rules, course structure, or syllabi at any time, and the changes or amendments made shall apply to all students from time to time.
d) Any disputes arising from these Rules will fall under the jurisdiction of Ahmedabad.

Annexure - I

Major / Comprehensive Project Monitoring and Evaluation

Title of the Policy	B.Tech. Major / Comprehensive Project
Domain	Teaching, Learning, and Evaluation
Version	1.0
Developed by	School of Technology (SoT), and School of Energy Technology (SoET)
Approved by	Director General
Purpose	This Policy aims to provide guidelines to the students and faculty members on the planning and execution of a semester-long B.Tech. Major / Comprehensive Project. The Policy includes the syllabus, course learning outcomes, guidelines on allotment and monitoring of projects, evaluation, reporting, etc. The idea is to bring parity across engineering schools and all the engineering departments.
Review Period	Three years from the date of notification
Date of Notification	December 02, 2022

1. Preamble

Engineering uses the knowledge provided by science with aims for helpful change in activities/methods/processes for sustenance and future developments. Engineers rely on subjective knowledge-how and opinions derived from personal and historical experience with the goal of wilful action and use.

In outcome-based Higher-Education Systems (HES), attributes of scientific and technological developments of the engineering graduate programs are mainly divided into the following domains:

- Knowledge acquisition and experiential learning through a multidisciplinary approach and their proper deliberation in an ethical way for the development of sustainable human society for a local/regional benefit with a global outlook.
- Development of lifelong learning skills with the team-building capacity to implement and manage engineering projects in the most economical way to benefit future societal needs.

A Bachelor of Technology (B.Tech.) project is designed to work on a problem of a relevant engineering discipline. In a semester-long major/comprehensive project, a student/group of students would identify the knowledge gap based on the existing works of literature and industry practices, set out the objectives of their study, design sequential study / experimentation, conduct / perform experiments, acquire relevant data, and analyze for meeting the identified knowledge gap. In the process of doing the work, the students enrich themselves with experiential learning, acquire knowledge for writing reports/ scientific contributions, and know the possible applications of their project outcome for societal needs and benefits.

With this background, it is necessary that the activities of the allotment, monitoring, and execution of the major project (MP) /comprehensive project (CP) are carried out in a systematic way. This is possible by drafting a detailed Policy on B.Tech. Major Project / Comprehensive Project.

The objective of this Policy for B.Tech. Major / Comprehensive Project is to provide guidelines to the students and faculty members on planning and execution of a semester-long B.Tech. Major / Comprehensive Project. The Policy includes the syllabus, course learning outcomes, guidelines on allotment and monitoring of projects, evaluation, reporting, etc. The idea is to bring parity across both the engineering schools and all the engineering departments.

2. Syllabus

The Major / Comprehensive Project will align with the aims of the engineering program and its areas of specialization. Depending on the nature of the engineering program, it will be based on the recent trends in technology, computational techniques, system / process analysis, construction / fabrication / production techniques, design methodologies, analytical formulation, solution / feasibility, etc. The student(s) shall carry out a comprehensive project at a relevant academic / R&D / industrial organization based on one or more of the following aspects**:**

The Major / Comprehensive Project may include a Prototype Design, Product Preparation / Development, Working Model, Fabrication of Set-up, Laboratory Experiments, Process Modification / Development, Simulation, Software Application / Development, Integration of Software and Hardware, Data Collection and Analysis, Survey / Case Study, Relevance to Industry 4.0 and Sustainable Development Goals of the United Nations, etc.

The student should perform a literature search to review current knowledge and developments in the chosen technical area. This project will be mainly conducted as an individual or small group project (maximum two students) under the direct supervision of a member of the academic staff and Industrial Supervisor. The specific project topic undertaken will reflect the common interests and expertise of the student(s) and supervisor/s.

The student should produce proof of progress reports or maintain a professional journal to establish work completed and schedule assigned/additional work within the time frame specified for the project.

The student is required to submit a detailed project report prepared professionally based on the work carried out and the results obtained so far. In the final review, the students are expected to deliver an exhaustive seminar presentation on the general area of work undertaken and specific contributions to that field and present in a forum involving poster presentations and demonstrations of operational hardware and software.

3. Course Learning Outcomes

On successful completion of the course, a student will be able to –

CO1: Use acquired knowledge to formulate problem definition related to industry / research organization / societal need.
CO2: Select the appropriate modern tools and techniques to demonstrate the technical aspects of the selected project.
CO3: Identify and apply appropriate steps to solve problems encountered during the project implementation.
CO4: Comprehend appropriate methodologies to carry out the project.
CO5: Compile the technical reports and conclude the project work with effective communication skills amongst peers, mentors, evaluators, and society.
CO6: Value the health, environment, and ethical practices and develop life-long learning skills for a promising career.

4. Categories of Projects

The B.Tech. Final year project can be carried out at the concerned Department / School or in industry / R&D organization / NGO. Accordingly, there are two major categories**:**

(i) **In-house Project / Major Project (MP)**: The student or a group of students (maximum two students in a group) can opt for carrying out a final year major project at the concerned Department / School. In the case of an interdisciplinary project, the student may carry out a project other than the parent Department / School after due permission of both Heads.

(ii) **Comprehensive Project (CP)**: In this case, a student or a group of students (maximum two students in a group) can work on his / her comprehensive project work at relevant industry / R&D organizations / established research laboratories / premier academic institutes / foreign universities / start-ups.

5. Expectations from the Students

The Major / Comprehensive Project intends to insight into critical thinking in students for approaching problems based on their technical faculties. The knowledge and aptitude gathered during the past semesters have to be put to use. To measure and record the outcome of these efforts, it is necessary to have proper documentation. Therefore, the students, regardless of the type of their project, have to submit the following documents at the end of the course**:**

(i) The project report, in a proper format, must be submitted in soft and hard copies. The hard copy should be submitted again in the prescribed format (hardbound) with the desired colours and font styles. The soft copy has to be submitted to the Department Course Coordinator.

(ii) The student is also required to submit the final presentation files (PPT or PPTX or PDF or any similar format), and similarity report from the prescribed Plagiarism Checking Software.

(iii) It is desirable that the student should come out with atleast one research paper based on the work carried out by him/her. Such a paper may be published in an indexed journal (non-paid journal) or presented (oral or poster presentation) at a reputed conference. The student has to submit copies (hard and soft) of the published / presented research papers to the concerned internal Supervisor. In the case of the poster presentation, a flex print of the poster needs to be submitted to the Department concerned.

(iv) The student(s), with the concerned Supervisor(s) explore the possibility of filing a Design / Process Patent based on the novelty of the research work.

There may be a situation where the research may not be published directly due to a non-disclosure agreement with the company in the case of the comprehensive project (CP). In such situations, the student has to take pre-emptive actions and work on a parallel article / poster / prototype close to or based on the ongoing work that can be presented without conflicts. The course of action must be pre-planned before the start of the project by the student and the expert respective thesis supervisor.

6. Course Coordinator – Roles and Responsibility

For the B.Tech. Final year project (CP / MP), each engineering Department will nominate a Course Coordinator. Preferably, the Course Coordinator should be a senior faculty member with prior experience in handling such a portfolio. The roles and responsibilities of the Course Coordinator are mentioned below:

(i) Arranging a meeting with the B.Tech. Students during semester VII (atleast one month prior to the start of semester VIII) and discuss the Major / Comprehensive Project Policy with the students.
(ii) Discussion of the Project Policy with the department faculty members to appraise them about the mentoring process, evaluation guidelines, etc.
(iii) Explain the procedure for getting a No Objection Certificate (NOC) to the students in case a student desires to work on Industry Project (CP).
(iv) Issue the NOC to the eligible students after consulting the concerned Head of the Department.
(v) Collect the Problem Definitions from the Department Faculty for the in-house project and share the same with the students before the commencement of semester VIII.
(vi) Preparing the document highlighting the names of students, roll numbers, type of project (CP / MP), project title / project area, contact details of the student, and industry supervisor (if applicable).
(vii) Allocation of Departmental Project Supervisor(s) to the students after getting approval from the HoD.
(viii) Circulate evaluation rubrics and schedule for the reviews / exams (in advance) to the students and the faculty members.
(ix) Circulate the review formats and evaluation sheets with the faculty members.
(x) Circulate the Thesis Format in soft copy to the students and the faculty members.
(xi) Collect the Internship Offer Letter and Project Completion Certificate through the Departmental Project Supervisor from the students.
(xii) Schedule the interim reviews and examinations after getting approval from the concerned HoD.
(xiii) Prepare a Panel of Examiners for the End-Semester Exam (Final Presentations) and obtain the approval of the concerned HoD and the Director.

(xiv) Collect the mark sheets from the examiners and upload them to the TCSion (or submit them to the Exam Section, PDEU).
(xv) Collating all data, evidence, documents, certificates, thesis copies, and submitting to the concerned HoD.
(xvi) Planning of a half-day Industry Orientation Program at the beginning of semester VIII and another half-day seminar (preferably at the time of Interim Presentation) on writing project report / paper, presentation of research work, avoiding Plagiarism, etc.

7. Project Supervisor – Roles and Responsibility

The Course Coordinator, in consultation with the concerned HoD, will assign Project Supervisor(s) to each student. The roles and responsibilities of the Project Supervisor are mentioned below:

For In-house Project (MP):
(i) To finalize a project definition after discussion with the concerned student(s).
(ii) To arrange hardware / software resources for the concerned student(s) to carry out the project.
(iii) To maintain an Attendance Sheet and keep track of the student's regular attendance.

For Comprehensive Project (CP):
(i) To ensure that a student gets a problem statement, necessary resources, and regular mentoring from the Industry Supervisor.
(ii) To meet the student periodically (either online / offline mode) to keep track of the project's progress.
(iii) To arrange a joint meeting with the Industry Supervisor to know the updates, performance of the students, and challenges (if any).
(iv) To visit the Industry (in-person visit).

Standard Guidelines for the Major and Comprehensive Projects:
(i) To submit the Evaluation Sheets and other necessary documents to the Course Coordinator.
(ii) To evaluate the project(s) as per the format and schedule provided by the Course Coordinator.
(iii) To guide the students in preparing presentations, thesis reports, and other relevant documents.
(iv) To encourage the student to develop a research paper or Patent based on the research work.

8. Guidelines for Allotment of Topics / Project Supervisor for the Major Projects

The major project should align with the objectives of the concerned engineering program and be relevant to its specialization. The following procedure is to be adopted for the allotment of the in-house project to students**:**

(i) To collect tentative titles/problem definitions (minimum two) from the Department's faculty members, preferably during November.
(ii) To share all the problem definitions with the students, preferably during the last week of November.

(iii) The students may interact with different faculty members and understand the project, its requirements, prerequisites, its alignments with their future plans, etc.
(iv) The final allotment of a Project is to be done purely on a merit basis (CPI of Semester VI).

9. Guidelines for Allotment of Topics for the Comprehensive Projects

The following procedure is to be followed while the allotment of a Comprehensive Project (CP) to students**:**

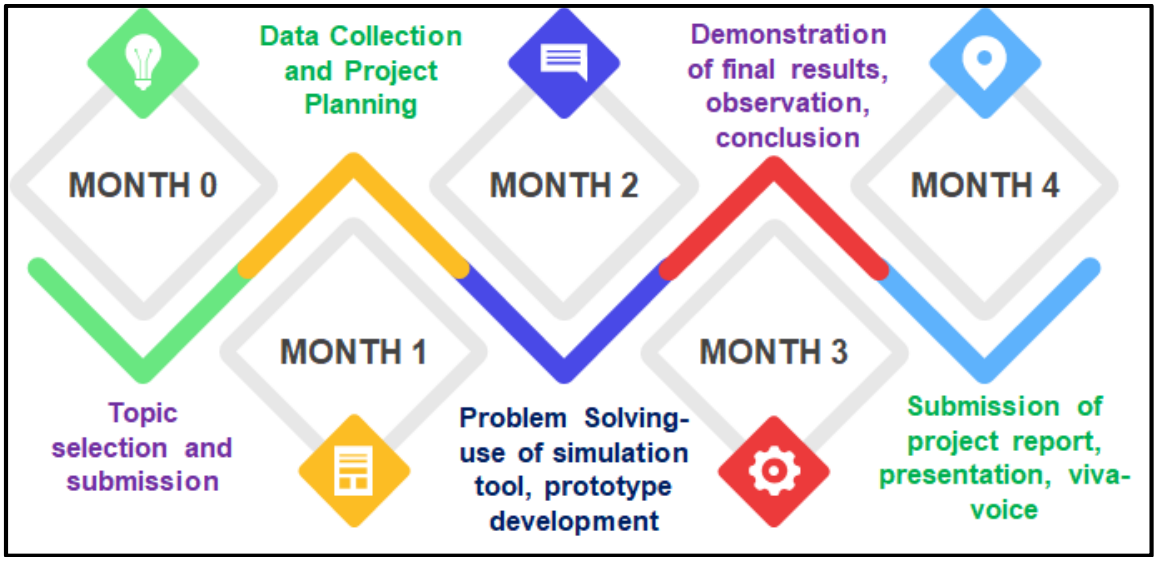
(i) To collect a probable list of names of the industries from the Career Development Cell during or by other means.
(ii) To allot projects and internal supervisors to the students.

10. Interdisciplinary Projects (within the University)

The students of two Engineering Schools (School of Technology and School of Energy Technology) should be allowed to undertake interdisciplinary projects (where supervisors from two different schools / departments are involved). For such projects, based on the problem definition, the expertise of the faculty, and the quantum of the work, two Supervisors (Supervisor-1 and Supervisor-2) are to be decided. Such a decision is to be taken in consultation with the respective Heads of the Departments. In this case, Supervisor-1 will be fully responsible for the entire process of the project and its successful completion. For all such projects, both Supervisors should get equal credit for any intellectual research outcomes (Papers, Patents, Awards, Achievements, etc.), and the annual performance appraisal.

11. Month-Wise Expected Project Activities

Effectively, the B.Tech. Major / Comprehensive Project duration is of four to five months. The month-wise expected activities are highlighted in the figure below:



12. Progress Monitoring

The progress of the projects (both CP and MP) are to be monitored regularly by the concerned Project Supervisors and the Project Evaluation Panels (Jury).

It is expected that all B.Tech. Semester VIII students working on Major / Comprehensive Projects should fill out a weekly report describing the activities / work carried out by him/her. The concerned Project Supervisor from the PDEU will go through the weekly report and provide necessary guidance to the concerned student(s). The prescribed format for the weekly report is attached as Appendix - I.

Apart from these, two Interim Presentations are to be arranged at the Department Level. The Interim Presentations are to be evaluated by Project Evaluation Panels (a Jury comprised of faculty members). The weightage of the Interim Presentation is 30%.

In the case of Comprehensive Projects, it is expected that the Internal Supervisor should visit the concerned Industry atleast once during the project span and get updates.

13. Project Evaluation

The project is to be evaluated by the Interim Presentations and a Final Presentation. All such presentations are to be assessed by a panel of examiners (a Jury). Each Jury should have a minimum of three members, including the concerned Project Supervisor(s). The members of the Jury are to be approved by the concerned HoD and Director. The Department should include external examiners in the Jury for the Final Presentation. Senior Alumni with more than five years of research / academic experience may be invited to the juries.

In the case of Comprehensive Projects, the Department may invite the Industry Supervisor by online / offline mode.

The project is to be evaluated based on the following parameters with the assigned weightage**:**

Interim Presentation - I	15% Weightage	Parameters as Attached in Appendix - II
Interim Presentation - II	15% Weightage	Parameters as Attached in Appendix - II
Final Presentation	50% Weightage	Parameters as Attached in Appendix - III
Project Report/Paper/Patent	20% Weightage	-

The marks obtained by the students in the Interim Presentation should be displayed on the notice board and also be informed to the student through email within one week from the respective Interim Presentation. The concerned Project Supervisor(s) should give detailed feedback to the student based on his/her performance during the Interim Presentation. Preferably, such feedback should be conveyed to the students through email.

14. Rubrics for Evaluation

The rubrics for the evaluation provide guidelines to the Evaluators/Examiners for assessing the students' learnings at different levels. Each student is to be evaluated against set criteria. In general, the following criteria/parameters are to be assessed thoroughly**:**

- Problem definition, literature survey, and identifying the research gaps
- Contribution and learning in terms of theoretical knowledge, practical knowledge
- Approach to solving the problem
- Report writing
- Presentation skills

The detailed rubrics are provided in Appendix - IV.

15. Project Report

The project report should include a problem statement, a literature survey, and an adequate explanation of methodology, data/input, results, analysis, and the final outcome.

Specifically, the followings should be included as part of the project report**:**

- Title of the Project
- Abstract
- Introduction
- Objective
- Research Methodology
- Results and Discussion
- Conclusion
- Future Scope of Work
- References
- Similarity Report
- Publication/Patent based on the Research Work

The project report should be made in LaTex or MS Word.

The student should avoid any kind of Plagiarism in the report. Once the report is ready, the student should generate a Similarity Report (quantified value of Plagiarism) using a standard Plagiarism Report. As per the UGC regulations of 2018 on the Promotion of Academic Integrity and Prevention of Plagiarism in Higher Educational, similarities up to 10% (minor and unintentional similarities) may be tolerated. However, it is highly desirable that the Project Supervisors should take due care and guide the students to avoid any kind of similarities.

16. Project Certificates / Undertakings

The Final Project Report should include the following certificates/undertakings**:**

(i) **Certificate of Originality of Work**: The students are required to submit a Certificate stating that the research work is original in nature and not submitted to any other school/university for any other degree/diploma. Similarly, an Undertaking of 'No Plagiarism' is also required. The prescribed format for the same is attached as Appendix - V.

(ii) **Certificate from the Project Supervisor/Industry Supervisor**: The student has to obtain a Certificate from the Project Supervisor(s), Industry Supervisor (wherever applicable), concerned HoD, and Director for satisfactory completion of the project. The format for the same is attached as Appendix - VI.

In the case of multiple Project Supervisors, the signatures of both Supervisors are essential.

17. Final Project Presentation

The final presentation of the project work will be in front of a jury. The student will prepare a formal PowerPoint presentation covering the following aspects related to the project carried out by him/her**:**

- Name, Roll Number, Department, Name of the Supervisor(s), etc.
- Problem Statement
- Motivation for the Project
- Objectives of the Project
- Literature Review
- Method Adopted
- Results (Analytical/Simulated/Measured)
- Conclusions/Summary
- Future Scope of Work
- Outcomes/Achievements (Papers/Patents/Presentations/etc.)
- References

18. Time Schedule

The detailed schedule of the Major / Comprehensive Project should be communicated through an Academic Calendar at the beginning of Semester VIII. A generic plan of project-related activities is given in a Table below**:**

Activity	Schedule
Appointment of a Course Coordinator at Department Level	November 2nd Week
Meeting with the Students and Faculty Members	November 3rd Week
Inviting the Project Definitions from the Faculty Members	November 4th Week
Sharing the Project Definitions with the Students	December 1st Week
Allotment of Project Supervisor(s)	December 3rd Week
Start of the Project	Latest by January 1st Week
Interim Presentation-I	February 2nd Week
Interim Presentation-II	April 1st Week
Visit the Industry by the Project Supervisor(s)	March
Submission of the Draft Copy of the Report to the Project Supervisor(s)	April 4th Week
Submission of the Final Report, PPT, Copies of Papers, etc. to the Course Coordinator	May 2nd Week
Final Presentation	May 3rd Week

Feedback from the Industry Supervisor for the Comprehensive Project

For the Comprehensive Project, the students' feedback is to be obtained from the concerned Industry. The feedback is to be taken into account while assigning the marks during the final presentations. The feedback is to be obtained by the concerned Departmental Project Supervisor of the student. Proper confidentiality is to be maintained while receiving feedback. The format for such feedback is attached as Appendix - VII.

19. Involving Alumni in the Major / Comprehensive Project

The Alumni of the University / School may be involved in the planning and execution of the Major / Comprehensive Project. The Alumni working in the Industry / R&D Organizations may be contacted for live research problems. The alumni having more than five years of Industry / Research experience may be considered a Supervisor-2 (co-guide) to the student and also in the evaluation of the project(s).

20. General Guidelines for the Students

- During the project span, the students need to maintain attendance as per the University norms.
- During all presentations (Interim and final presentations), the student needs to come in formal attire (Males - Light Shaded Shirt and Dark Trousers, Females - Light Shaded Shirt and Dark Trousers or Salwar Kameez).
- Students must submit Weekly Progress Reports as per the prescribed format. Failing to do so will result in a penalty of the mark(s).
- Students must ensure that there should not be a plagiarism of any type in the Project Report/Presentation or any Project Outcome (Paper, Patent, Book, etc.). Any attempt at Plagiarism or use of unfair means / practices will result in severe disciplinary action as per the University norms.
- In case of any conflict in the selection of the exact Project Definition by two different students, the allotment will be made on merit by the respective Course Coordinator.
- If a student wishes to change the Project Definition / Project Supervisor / Industry, the permission of the concerned Head of the Department must be obtained. Such changes are permitted only up to thirty days from the date of commencement of Semester VIII.

Appendix - I: Format for the Weekly Progress Report

Name of the Student	
Roll Number	
Complete Address of the Industry/R&D Organization where a student is working (if applicable)	
Name of the Supervisor from PDEU	
Email of the Supervisor from the Industry (if applicable)	
Mobile Number of the Supervisor from the Industry (if applicable)	
Problem Statement	
Progress Made in Week 1	
Progress Made in Week 2	

Progress Made in Week 15	

Appendix - II: Evaluation Sheet for the Interim Presentation

School of Technology, Pandit Deendayal Energy University, Gandhinagar

Department of_____ Engineering

B.Tech. in _____ Engineering

B.Tech. Major/Comprehensive Project – Interim Presentation

Sr. No.	Name of the Student	Roll No.	Understanding of the Problem Definition and Literature Survey	Project Progress	Question Answer	Total Marks
			Marks			
			10	10	10	30

Signature of Supervisor **Signature of Examiner** **Signature of Examiner**

Appendix - III: Evaluation Sheet for the Final Presentation

School of Technology, Pandit Deendayal Energy University, Gandhinagar

Department of_____ Engineering

B.Tech. in _____ Engineering

B.Tech. Major/Comprehensive Project – Final Presentation

Sr. No.	Name of the Student	Roll No.	Quality and Quantity of Work Done	Research Outcomes	Question Answer	Report	Total Marks
			Marks				
			20	20	10	20	70

Signature of Supervisor **Signature of Examiner** **Signature of Examiner**

Appendix - IV: Rubrics for Project Evaluation

Criteria	Excellent	Good	Average	Needs Significant Improvement
Problem definition, Literature survey, and identifying the research gaps	The problem is well-formulated and feasible	The problem is formulated satisfactorily and is feasible	There is a scope for improvement in the problem formulation	The problem is poorly formulated
Contribution and learning in terms of theoretical knowledge, practical knowledge	There is a very significant contribution to technical knowledge.	There is a contribution to technical knowledge.	There is little contribution to technical knowledge.	There is no contribution to the technical knowledge of the student.
Approach to solving the problem	All the objectives are satisfactorily achieved	All the objectives are satisfactorily achieved	Many of the objectives are not satisfactorily achieved	Very few objectives are satisfactorily achieved
Report writing	The report is well written as per the given formatting guidelines.	The report is written as per the given formatting guidelines.	The report is written as per the given formatting guidelines. However, in some places, corrections are needed.	The report is not written as per the given formatting guidelines.
Presentation skills	Exceptional presentation skills with good desired Confidence.	Presentable, Positive attitude, and confidence.	Presentable, And sufficient confidence.	Lack of Confidence and presentation skills

Appendix - V: Certificate of Originality of Work

I hereby declare that the B.Tech. Project entitled "XXXX" submitted by me for the partial fulfillment of the degree of Bachelor of Technology to the Dept. of XXXX Engineering at the School of XXXX, Pandit Deendayal Energy University, Gandhinagar, is the original record of the project work carried out by me under the supervision of Prof. XXXX.

I also declare that this written submission adheres to University guidelines for its originality, and proper citations and references have been included wherever required.

I also declare that I have maintained high academic honesty and integrity and have not falsified any data in my submission.

I also understand that violation of any guidelines in this regard will attract disciplinary action by the institute.

Name of the Student:

Roll Number of the Student:

Signature of the Student:

Name of the Supervisor:

Designation of the Supervisor:

Signature of the Supervisor:

Place:

Date:

Appendix - VI: Certificate from the Project Supervisor / Head

CERTIFICATE

This is to certify that the Major / Comprehensive Project Report entitled "_____" submitted by Mr. / Ms._____, Roll No. _____ towards the partial fulfilment of the requirements for the award of degree in Bachelor of Technology in the field of _____ Engineering from the School of_____, Pandit Deendayal Energy University, Gandhinagar is the record of work carried out by him / her under my / our supervision and guidance. The work submitted by the student has in my / our opinion reached a level required for being accepted for examination. The results embodied in this major project work to the best of our knowledge have not been submitted to any other University or Institution for the award of any degree or diploma.

Name and Sign of the Supervisor

Name and Sign of the Industry Supervisor

Name and Sign of the HoD

Name and Sign of the Director

Place

Date

Appendix - VII: Feedback from the Industry Supervisor

Name of the Student	
Roll Number of the Student	
Name of the Industry / R&D Organization	
Name of the Industry Supervisor	

Feedback / Evaluation by the Industry Supervisor					
Sr. No.	**Question**	**Excellent (10/10)**	**Good (8/10)**	**Satisfactory (6/10)**	**Poor (4/10)**
1	Whether the student is visiting the site/industry regularly?				
2	How is the knowledge and skills of the student?				
3	Was the student able to manage the daily given tasks?				
4	Did the student meet your expectations?				
5	How is the overall impression (soft skills, smartness, teamwork, etc.) of the student?				
Whether the student is suitable for placement in your organization/industry?					
Remarks by the Supervisor					
Signature of the Supervisor					
Place					
Date					

Annexure - II

Minor Specialization

Sr. No.	Name of the Minor Specialization	Name of the Department Offering the Minor Specialization
Under SoT		
1.	Computational Data Science	Departments of Computer Engineering and Department of Mathematics (Jointly)
2.	Smart and Sustainable Infrastructure	Department of Civil Engineering
3.	Internet of Things	Department of ICT
4.	Robotics	Department of Mechanical Engineering
Under SoET		
5.	Sustainability Engineering	Department of Chemical Engineering
6.	Coastal & Offshore Engineering	Department of Petroleum Engineering

General Guidelines

- The **III semester** student of any Department of the Schools of Technology and School of Energy Technology can apply to register for a minor specialization of other Department. For example, a student of Mechanical Engineering can take minor specialization offered by any other Department, except Mechanical Engineering.

- Student with minimum CPI of 7.5 at the end of second semester without any course backlog pending at the time of applying is eligible to apply for the minor specialization.

- A maximum intake of 75 students in a division per minor specialization.

- There will be additional fee for the Minor specialization. Rs. 2000/- per credit in a semester is to be paid on selection for a minor specialization. (For example, in a course having 3 credit, the student has to deposit Rs. 6000/- in a semester).

- Minor specialization will be offered during semester III to semester VII (one extra course during semester, over and above the regular courses of major program).

- Timetables for courses of minor specialization may be scheduled in the early morning/late evening, on any day including Saturday/Sunday.

- The rights for offering admission, cancellation of admission, teaching & learning, attendance, examination, etc., shall be governed as per the norms of the University.

- The admission to the Minor specialization will be as per **merit based on** latest CPI **and on pro rata** basis.

- Successful completion of minor specialization credits will be specified on the degree counted for the credit requirements for the minor specialization.

- The student has to maintain a minimum CPI of 7.5 throughout the regular B.Tech. Program (Major). As a part of this, if the CPI falls below 7.5 at any point of time after registering for the Minor specialization, the registration for the Minor specialization Degree shall stand cancelled.

- A student registered for a Minor specialization must pass all courses that constitute a Major and Minor specialization requirement, without which joint Degree Certificate for Major with Minor specialization will not be issued.

- For any case of in-discipline, the registration for Minor specialization shall stand cancelled, and no fee refund thereof will be given to the student.

- A student may withdraw from Minor specialization at any time before completing graduation by submitting a request application to the Director's office through the HoD.

Minor 1: Computational Data Science

Name of the Minor Specialization:	Computational Data Science
Name of the Department and School Offering the Minor Specialization:	Department of Computer Science & Engineering and Department of Mathematics /SoT
Name of the UG Programs for Whom Minor Specialization is Offered:	All Branches of Engineering except Computer Science & Engineering
Total Additional Credits to be Earned:	18

Course No.	Course Code	Course Name	L	T	P	Credit	Offered in Semester (Preferably)
1	XX-01T	Essential Mathematics for Data Science	3	0	0	3	III
2	XX-02T	Machine Learning for Beginners	3	0	0	3	IV
3	XX-02P	Machine Learning for Beginners Lab	0	0	2	1	IV
4	XX-03T	Time Series Analysis & Data Assimilation	3	1	0	4	V
5	XX-04T	Statistical and Computational Optimization	3	0	0	3	VI
6	XX-05T	Advance Data Science with Capstone Project	3	0	0	3	VII
7	XX-05P	Advance Data Science with Capstone Project Lab	0	0	2	1	VII
		Total Credits				**18**	

Minor 2: Smart and Sustainable Infrastructure

Name of the Minor Specialization:	Smart and Sustainable Infrastructure
Name of the Department and School Offering the Minor Specialization:	Department of Civil Engineering /SoT
Name of the UG Programs for Whom Minor Specialization is Offered:	All Branches of Engineering except Civil Engineering
Total Additional Credits to be Earned:	18

Course No.	Course Code	Course Name	L	T	P	Credit	Offered in Semester (Preferably)
1	XX-01	Remote Sensing (RS) and Geographical Information System (GIS) for Sustainable Infrastructure	3	0	0	3	III
2	XX-02	Remote Sensing (RS) and Geographical Information System (GIS) for Sustainable Infrastructure- **Lab**	0	0	2	1	III
3	XX-03	Big data for Environmental Management	2	1	0	3	IV
4	XX-04	Intelligent Transportation System	3	1	0	4	V
5	XX-05	Building Information Modelling	2	0	0	2	VI
6	XX-06	Building Information Modelling -**Lab**	0	0	4	2	VI
7	XX-07	Smart Infrastructure and Cities	3	0	0	3	VII
					Total Credits	**18**	

Minor 3: Internet of Things

Name of the Minor Specialization:	Internet of Things
Name of the Department and School Offering the Minor Specialization:	Department of Information and Communication Technology / SOT
Name of the UG Programs for Whom Minor Specialization is Offered:	All Branches of Engineering except ICT
Total Additional Credits to be Earned:	18

Course No.	Course Code	Course Name	L	T	P	Credit	Offered in Semester
1	IOT-01T	Introduction to IoT	3	0	0	3	III
2	IOT-02T	IoT Networks and Protocols	3	0	0	3	IV
3	IOT-02P	IoT Networks and Protocols Lab	0	0	2	1	IV

4	IOT-03T	Data Analytics and Visualization for IoT	3	0	0	3	V
5	IOT-03P	Data Analytics and Visualization for IoT Lab	0	0	2	1	V
6	IOT-04T	Embedded Systems for IoT	3	0	0	3	VI
7	IOT-04P	Embedded Systems for IoT Lab	0	0	2	1	VI
8	IOT-05T	IoT Security	3	0	0	3	VII
Total Credits						18	

Minor 4: Robotics

Name of the Minor Specialization:	Robotics
Name of the Department and School Offering the Minor Specialization:	Department of Mechanical Engineering / SoT
Name of the UG Programs for Whom Minor Specialization is Offered:	All branches excluding Mechanical Engineering
Total Additional Credits to be Earned:	18

Course No.	Course Code	Course Name	L	T	P	Credit	Offered in Semester (Preferably)
1	XX-01	Introduction to Robotics	3	1	0	4	III
2	XX-02	Mechanics of Robots	3	0	0	3	IV
3	XX-03T	Microprocessor & Embedded Systems	3	0	0	3	V
	XX-03P	Microprocessor & Embedded Systems Laboratory	0	0	2	1	
4	XX-04	Control of Robotic Systems	3	0	0	3	VI
5	XX-05	Project in Robotics	1	0	6	4	VII
Total Credits						**18**	

Minor 5: Sustainability Engineering

Name of the Minor Specialization:	Sustainability Engineering
Name of the Department and School Offering the Minor Specialization:	Department of Chemical Engineering / SoET
Name of the UG Programs for Whom Minor Specialization is Offered:	All branches excluding Chemical Engineering
Total Additional Credits to be Earned:	18

Course No.	Course Code	Course Name	L	T	P	Credit	Offered in Semester

							(Preferably)
1	XX-01T	Waste Technology	3	0	0	3	III
	XX-01P	Waste Technology Laboratory	0	0	2	1	
2	XX-02	Green Technology and Sustainable Engineering	3	0	0	3	IV
3	XX-03	Biofuels and Bioprocesses Technology	3	0	0	3	V
4	XX-04T	Basics of Separation Sciences	3	0	0	3	VI
	XX-04P	Basics of Separation Sciences Laboratory	0	0	2	1	
5	XX-05T	Nanotechnology for Energy Applications	3	0	0	3	VII
	XX-05P	Nanotechnology for Energy Applications Laboratory	0	0	2	1	
Total Credits						**18**	

Minor 6: Coastal & Offshore Engineering

Name of the Minor Specialization:	Coastal & Offshore Engineering
Name of the Department and School Offering the Minor Specialization:	Department of Petroleum Engineering / SoET
Name of the UG Programs for Whom Minor Specialization is Offered:	All branches excluding Petroleum Engineering
Total Additional Credits to be Earned:	18

Course No.	**Course Code**	**Course Name**	**L**	**T**	**P**	**Credit**	**Offered in Semester (Preferably)**
1	XX-01T	Marine Geosciences	3	0	0	3	III
	XX-01P	Marine Geosciences Laboratory	0	0	2	1	
2	XX-02	Physical oceanography and modelling	3	0	0A	3	IV
3	XX-03	Ocean Engineering and Technology	3	1	0	4	V
4	XX-04	Design of coastal structures and pipelines	3	0	0	3	VI
5	XX-05	Advanced design and monitoring of offshore energy systems	3	1	0	4	VII
Total Credits						**18**	

Annexure - III

Criteria for awarding the Merit medals to the passing out students:

Sr. No.	Particulars	Criteria
1.	For each programme – discipline with more than 30 no. of passed out students of a batch.	Gold, Silver & Bronze to First, Second & Third rank students.
2.	For each programme – discipline with at least 10 but less than 30 no. of passed out students of a batch	Gold & Silver medals only to First & Second rank students. Further, the CPI of the First rank student is to be 8 or more on 10 scale, & 3.2 out of 4 as the case may be.
3.	For each programme – discipline with at least 3 but less than 10 no. of passed out students of a batch	Gold medal only to First rank student. Further, the CPI of the First rank holder is 8 or more on 10 scale & 3.2 out of 4 scale as the case may be.
4.	For each programme – discipline with less than 3 no. of passed out students of a batch	No medals

Additionally,

i) The student must not have been penalized for indulging in any kind of indiscipline including Unfair Means in examination.

ii) The student must have passed all the courses of the study, at one attempt only.

Tie breaking criteria for the Merit Medals:

(Effective from the students passing out at the end of the academic year 2022-23 and onwards)

If CPI for two or more students are the same, then to break the tie the comparison will be made in following order to resolve it**:**

i. CPI to be observed up to 3 decimal points.
ii. SPI of 8^{th} semester
iii. CPI at the end of 7^{th} Semester
iv. CPI at the end of 6^{th} Semester