



Dayananda Sagar University School of Engineering

Devarakaggalahalli, Harohalli, Kanakapura Road, Bangalore South Dt., Bengaluru – 562 112

Department of Computer Science & Technology

B.Tech. PROGRAMME– 2025-2029 BATCH

SCHEME AND SYLLABUS

(1th to 8th semester)

Academic Year 2026-27



Implementation of National Education Policy (NEP) 2020 for the B.Tech students of Batch 2025-2029

The implementation of Curriculum follows NEP 2020 and addresses the following features and categories of courses:

1. Student Centric flexible curriculum.
2. Inter-disciplinary Courses,
3. Multi-disciplinary Courses,
4. Ability Enhancement Courses,
5. Skill Enhancement Courses,
6. Value Added Courses,
7. Product Design and Development,
8. Internship (Rural Internship, Industry Internship, Research/Development Internship),
and
9. Multiple Exit and Multiple Entry
 - Certificate in Engineering after completion of first year.
 - Diploma in Engineering after completion of second year.
 - Advanced Diploma in Engineering after completion of third year.
 - Degree in Engineering after completion of fourth year.



PART-A

GOVERNING REGULATIONS FOR BACHELOR OF TECHNOLOGY (B. Tech.) 2025-29

PREAMBLE

The School of Engineering under Dayananda Sagar University (DSU) provides Science & Technology based education leading to the development of high calibre engineers suitable for Industry and Scientific Organization. The curriculum focuses on knowledge-based course work integrated with skill development as a part of training. It equally helps in inculcating the scientific temper for the lifelong processes of learning. At the Undergraduate level, a candidate goes through the foundation courses in Science, Humanities & Engineering. Each department ensures that the courses cover both the core & electives courses, as required. Provision for Institutional elective help the candidates to acquire interdisciplinary knowledge base or specialize significantly in an area outside the parent discipline.

DEFINITIONS OF KEY WORDS

- (i) **Academic Year:** Two consecutive odd, even semesters and a summer term for make up if required.
- (ii) **Course:** Usually referred to as a subject, a course may consist of any of Lecture/Tutorials/Practical /Seminar/Mini project/Project work.
- (iii) **Credit:** A unit by which the course work is measured. One credit is equivalent to one hour of lecture or one hour of tutorial or two hours of laboratory/practical/ workshop practice per week.
- (iv) **Credit Point:** It is the product of grade point and number of credits per course.
- (v) **Cumulative Grade Point Average (CGPA):** It is the measure of overall cumulative performance over all semesters. It is expressed up to two decimal places.
- (vi) **First Attempt:** If a candidate has completed all formalities of academic requirement in a term and become eligible to attend the examinations and attend all the end semester examinations, such attempt shall be considered as first attempt.



- (vii) **Grade Point:** It is a numerical weight allotted to each letter grade on a 10-point scale.
- (viii) **Letter Grade:** It is an index of the performance in a said course. Grades are denoted by alphabets.
- (ix) **Programme:** An educational activity leading to award a degree or Certificate.
- (x) **Semester Grade Point Average:** It is a measure of performance during a semester. It shall be expressed up to two decimal places.
- (xi) **Transcript:** Based on the grades earned, a grade certificate shall be issued after every semester to the candidate registered.
- (xii) **Failure:** It is the case of appearing for Semester End Examinations but fails to obtain minimum passing marks in Semester End Examinations.
- (xiii) **Detain:** It is the case of not satisfying the eligibility criteria w.r.t Attendance /Internal Assessment in each course to appear for Semester End Examination.
- (xiv) **Audit Course:** A course to be taken by the student without benefit of a grade or a credit.
- (xv) **Not Fit For The Program (NFFTP):** It is the failure of satisfying the criteria laid down by regulations to continue the program of study, which leads to the termination from the University

RULES AND REGULATIONS

UG 1. All B.Tech programmes offered by the University shall be governed by the DSU B.Tech Rules and Regulations – 2023.

UG 2. The B. Tech. rules and regulations shall be applicable to any new discipline(s) that may be introduced in future.

UG 3. A candidate shall become eligible for the award of the B.Tech. Degree after fulfilling all the academic requirements as prescribed by the B.Tech. Rules and Regulations of DSU.

UG 4. ELIGIBILITY FOR ADMISSION

UG 4.1. Admission to First Year Bachelor of Technology shall be open to candidates who have passed the second year Pre-University or XII standard or equivalent examination recognized by the University.

UG 4.2. The candidate shall have studied and passed English as one of the courses and secured not less than forty five percent (45%) marks in aggregate with Physics and Mathematics as



compulsory courses, along with any one of the following courses, namely, Chemistry, Bio-Technology, Computer Science, Biology and Electronics. Eligibility shall be 40% in optional courses in case of candidates belonging to SC/ST and OBC candidates from Karnataka.

UG 4.3. Admission to II year /III Semester Bachelor of Technology under Lateral entry shall be open to the candidates who have passed diploma or equivalent qualification as recognized by statutory and regulatory body.

UG 4.4. For candidates who have completed Diploma from other than State of Karnataka, their eligibility shall be based on the recognition of the Diploma awarding Boards by the University.

UG 4.5. Diploma candidates seeking admission under Lateral entry shall take up bridge courses as prescribed in the Scheme of Teaching.

UG 4.6. Admission to II year /III Semester Bachelor of Technology shall be open to candidates who have passed B. Sc. degree from a recognized University or equivalent as recognized by the University and secure not less than 45% marks in aggregate (including all semesters). Eligibility shall be 40% in case of candidates belonging to SC/ST and OBC candidates from Karnataka.

UG 4.7. B.Sc. Graduates seeking admission under Lateral entry shall take up bridge Courses as prescribed in the Scheme of Teaching.

UG 5. ACADEMIC SESSION

UG 5.1. Each academic session is divided into two semesters of approximately sixteen Weeks duration and a summer term: an odd semester (August -December), an even semester (January - May) and summer term (Make-up term) June-July.

UG 5.2. The approved schedule of academic activities for a session, inclusive of dates for registration, mid-semester and end-semester examinations, vacation breaks, shall be laid down in the Academic Calendar for the session.

UG 6. CHANGE OF BRANCH

UG 6.1. Normally a candidate admitted to a particular branch of the undergraduate programme will continue studying in that branch till completion.



UG 6.2. However, in special cases, the University may permit a candidate to change from one branch of studies to another after the first two semesters. Such changes will be permitted, in accordance with the provisions laid down hereinafter.

UG 6.3. Only those candidates will be considered eligible for change of branch after the second semester, who have completed all the credits required in the first two semesters of their studies in their first attempt, without having to pass any course requirement in the summer term examination.

UG 6.4. Applications for a change of branch must be made by intending eligible candidates in the prescribed form. The academic section will call for applications at the end of second semester of each academic year and the completed forms must be submitted by the last date specified in the notification.

UG 6.5. Candidates may enlist their choices of branch, in order of preference, to which they wish to change over. It will not be permissible to alter the choices after the application has been submitted.

UG 6.6. Change of branch shall be made strictly in the order of merit of the applicants. For this purpose, the CGPA obtained at the end of the second semester shall be considered. In case of a tie, SGPA of second semester followed by SGPA of first semester shall decide the tie.

UG 6.7. The applicants may be allowed a change in branch, strictly in order of merit, course to the limitation that the strength of a branch should not fall below the existing strength by more than ten percent and should not go above the sanctioned strength by more than ten percent. The minimum class strength of 75% should be maintained, while considering the change of branch.

UG 6.8. All changes of branch made in accordance with the above rules shall be effective from the third semester of the applicants concerned. No change of branch shall be permitted after this.

UG 7. COURSE STRUCTURE

UG 7.1. Medium of instruction, examination and project reports shall be in English except in case of any language audit courses.

UG 7.2. Teaching of the courses shall be reckoned in credits: Credits are assigned to the Courses based on the following general pattern:

- (a) One credit for each lecture period.



- (b) One credit for each tutorial period.
- (c) One credit per two hours for each Laboratory or Practical or workshop session.
- (d) Credits for seminar, mini project, project as indicated in the scheme/curriculum of teaching.

UG 7.3. In order to qualify for a B. Tech. degree of the University, a candidate is required to complete the credit requirement as prescribed in the scheme/curriculum for a particular programme.

UG 7.4. The program of a study consists of the following components:

- (i) Humanities and Social Sciences including Management courses
- (ii) Basic Science courses
- (iii) Engineering Science courses
- (iv) Professional core courses
- (v) Open Electives
- (vi) Project work, seminar and internship
- (vii) Mandatory/Audit Courses

UG 7.5. Every B. Tech. Programme shall have a curriculum and syllabi for the courses approved by the Board of Governors. Board of Studies will discuss and recommend the syllabi of all the undergraduate courses offered by the department from time to time before sending the same to the Academic Council. Academic Council will consider the proposals from the Board of Studies and make recommendations to the Board of Management and Board of Governors for consideration and approval. For all approved courses, the copyright shall be with DSU.

UG 7.6. Faculty Advisor: To help the candidates in planning their courses of study and getting general advice on the academic programme, the concerned department will assign a Faculty Advisor to each candidate.

UG 8. REGISTRATION

UG 8.1. Every candidate is required to register for approved courses through the assigned Faculty Advisor at the end of previous semester or first week of the current semester, as notified by the Academic Calendar.



UG 8.2. The Dean may cancel the registration of one or more courses if they are found to violate some rules or if there are restrictions imposed due to disciplinary reasons.

UG 8.3. The student is permitted to drop a course/s from the registered courses, within 4 weeks after the start of the Semester/Year as notified in the academic calendar, with the permission of Faculty Advisor and Chairperson / Dean / Principal of the respective School/College and no mention will be made in the grade card for dropped courses.

UG 8.4. The student is permitted to withdraw course/s from the registered courses, within 4 weeks before the start of the Semester/Year End Examinations as notified in the academic calendar, with the permission of Faculty Advisor and Chairperson / Dean / Principal of the respective School / College and Grade “W” will be awarded for course/s that were withdrawn.

UG 8.5. For the courses with “W” grade, the students should re-register subsequently when offered, either in MOOCS or in-class or summer term and fulfil the passing criteria to secure a grade in that course for change from “W” grade.

UG 8.6. Only those candidates shall be permitted to register who have:

- (a) The academic eligibility to move to higher semesters (UG 9 & UG 11)
- (b) Cleared all University, Hostel and Library dues and fines (if any) of the previous semesters,
- (c) Paid all required advance payments of University and Hostel dues for the current semester,
- (d) Not been debarred from registering on any specific ground.
- (e) A minimum CGPA of 4 in the previous semesters

UG 9. EXAMINATION: ASSESSMENT CRITERIA & ELIGIBILITY FOR PROGRESSION

Every student shall be assessed for eligibility to higher semester through Continuous Internal Assessment (CIA) and Semester End Examination (SEE) as prescribed.

UG 9.1. The Continuous Internal Assessment (CIA) shall normally be conducted by the assessment components spread through the running semester; the components of CIA may be tests, mid-term exam, quiz, term paper, simulation based problem solving, open-book test, solving open-end problems, mini- projects, seminars, viva-voce, awarding marks for



attendance and such activities that enhance original thinking of students. The Course instructor shall announce the detailed methodology for conducting the various components of CIA together specifying component-wise weightages right in the commencement of each semester.

UG 9.2. The Semester End Examinations (SEE) shall be conducted at the end of each semester. The SEE components may be a closed or open book examination, project demo, viva-voce, and/or a portfolio presentation.

UG 9.3. CIA and SEE shall respectively have 60:40 percent weightage. The Vice-Chancellor, on the recommendations of the Dean of Faculty and Department Chair, in exceptional cases, may approve the variation in this weightage ratio.

UG 9.4. The performance of a student with respect to a course in a semester shall be the combined score of marks/points, he/she secures in CIA and SEE, put together. A minimum of securing 40% marks, combining both the CIA with SEE marks secured with respect to a course, shall entail the student a PASS in the course. The Vice-Chancellor, in such cases where the entire class has fared poorly in the course, upon receiving a representation by the students / department, and based on the recommendations of the committee constituted for the purpose, may review the criterion of 40%.

UG 9.5. ATTENDANCE ELIGIBILITY

UG 9.5.1. Candidates are required to attend all the classes (Lectures, Tutorials, Practical, Workshop Practice, etc.) for which they have been registered.

UG 9.5.2. The candidate shall not be allowed to appear for the end semester examination if his/her attendance falls below 85% in each course and shall be awarded a “NE” grade in that course.

UG 9.5.3. A provision for condonation of 10% of the attendance by the Vice-Chancellor on the specific recommendation of the chairman of the department and Dean, showing reasonable cause such as:

- (a) Any medical emergencies/ illness where the candidate requires rest for the specified number of days certified by a Government Doctor only /any death in the family (near and dear ones).
- (b) If the student represents the University in Sports/ Cultural Activities/Extra- curricular activities/Co-curricular activities.
- (c) If a student presents a Paper in National/ International Conferences or attends any



recognized Workshops/Seminars.

UG 9.5.4. If the period of leave is for a short duration (less than two weeks), prior application for leave shall have to be submitted to the Chairman of the Department concerned stating fully the reasons for the leave requested for along with supporting document(s). Such leave will be granted by the Chairman of the Department. However, the student shall comply with 9.5.2 and 9.5.3. of regulations.

UG 9.5.5. If the period of absence is likely to exceed two weeks, a prior application for grant of leave will have to be submitted through the Chairman of the Department to the Dean with supporting documents in each case. The decision to grant leave shall be taken by the Dean on the recommendation of the Chairman of the Department. However the student shall comply with 9.5.2 and 9.5.3. of regulations.

UG 9.5.6. It shall be the responsibility of the candidate to intimate the concerned course instructor(s) regarding his/her absence before availing the leave.

UG 9.6. CONTINUOUS INTERNAL ASSESSMENT

UG 9.6.1. Candidate shall participate in all components of Continuous Internal Assessment (CIA) to become eligible to take up the Semester End Examination or else 'NE' grade shall be awarded. However, the Vice-Chancellor, under exceptional circumstances on the recommendations of Dean of Faculty and Department Chair, may exempt a student from participation in CIA component/s and permit taking up SEE.

UG 9.6.2. There shall be no marks improvement of Continuous Internal Assessment; however, the withdrawal and re-registering of the course shall be permitted.

UG 9.6.3. Continuous Evaluation consists of:

UG 9.6.3.1. Under normal circumstances for theory courses, total CIA weightage shall be a total of 60%, put together all components with varying weightages; Under exceptional circumstances with the approval of the Vice-Chancellor on the recommendation of Dean of the School, the weightage of CIA may be lower/higher than 60%.

The components of CIA may be tests, mid-term exam, quiz, term paper, simulation based problem solving, open-book test, solving open-end problems, mini-projects, seminars, viva-voce, awarding marks for attendance and such activities that enhance original thinking of students.



UG 9.6.3.2 Under normal circumstances for the practical courses (laboratory, workshops, and any such hands-on activity), total CIA weightage shall be a total of 60%, put together all components with varying weightages; Under exceptional circumstances with the approval of the Vice-Chancellor on the recommendation of Dean of the School, the weightage of CIA may be lower/higher than 60%.

CIA may have components such as conduction of an experiment, record writing, viva-voce, tests, simulation, mid-term exam, quiz, demo, term paper, mini-projects, seminars, marks for attendance and activities which enhances original thinking of students.

UG 10. GRADING

UG 10.1 There shall be continuous assessment of a candidate's performance throughout the semester and grades shall be awarded by the concerned course instructor and/or the appropriate committee appointed for this purpose on the following basis.

UG 10.2 The grading will normally be based on CIA and SEE.

UG 10.3. Practical Courses/ Workshop Practice: The evaluation will be based on instructor's continuous internal assessment, a test and end semester examination.

UG 10.4. The weightage assigned to different components of continuous internal assessment will be announced by the concerned instructor(s) in the beginning of the semester.

UG 10.5. The results of performance of the candidates in the Continuous Internal assessment Test shall be announced by the instructors.

UG 10.6. In case of seminar, evaluation will be as determined by the grade awarding Committee (as per the Program scheme).

UG 10.7. Mini project /projects will be based on Continuous evaluation by Guide(s) and Semester End Examination (as per the Program scheme)

UG 10.8. The results of performance of the candidates shall be announced by the Controller of Examinations.

UG 10.9. METHOD OF AWARDING LETTER GRADES

UG 10.9.1. Relationships among Grades, Grade points and % of marks are listed in Table1.

UG 10.10. DESCRIPTION OF GRADES



UG 10.10.1 Table 1 shows the relationships among the grades, grade points and percentage of marks.

UG 10.10.2. A student will have to ensure a minimum CGPA of 4, to become eligible for the award of the degree.

UG 10.10.3. A candidate shall have to repeat all courses in which he/she obtains ‘F’ Grades until a passing grade is obtained.

Table 1: Grade, Points, Grade Description and % of marks

GRADE	GRADE POINTS	DESCRIPTION	% MARKS
O	10	Outstanding	90 to 100
A+	9	Excellent	80 to 89
A	8	Very Good	70 to 79
B+	7	Good	60 to 69
B	6	Above Average	55 to 59
C	5	Average	50 to 54
P	4	Pass	40 to 49
F	0	Fail	< 40
AP	-	Audit Pass	-
AF	-	Audit Fail	-
IC	-	In Complete	-
NE	-	Not Eligible	-
W	-	Withdrawn	-

UG 10.10.4. An IC grade denotes incomplete performance in any Theory and/or Practical Assessment. It may be awarded in case of absence on medical grounds or other special circumstances for SEE. Requests for IC grade should be made at the earliest but not later than the last day of SEE.



UG 10.10.5. The student can appear for the course/s with IC grade, when exams are conducted subsequently by the University for those Courses.

UG10.11. EVALUATION OF PERFORMANCE

UG10.11.1. The performance of a candidate shall be evaluated in terms of the Semester Grade Point Average (SGPA) which is the Grade Point Average for a semester, Cumulative Grade Point Average (CGPA) which is the Grade Point Average for all the completed semesters.

UG 10.11.2. The Earned Credits (EC) are defined as the sum of course credits for courses in which candidates have been awarded grades between O to P. (Table 1)

UG 10.11.3. Points earned in a semester = (Course credits X Grade point) for Grades O - P

UG 10.11.4. The SGPA is calculated on the basis of grades obtained in all courses, except audit courses and courses in which F grade or below, registered for in the particular semester.

$$\text{SGPA} = \frac{\text{Points secured in the semester (O – P Grades)}}{\text{Credits registered in the semester, excluding audit}}$$

UG 10.11.5. The CGPA is calculated on the basis of all pass grades, except audit courses.

$$\text{CGPA} = \frac{\text{Cumulative points secured in all the passed courses (O – P Grades)}}{\text{Cumulative registered credits, excluding audit}}$$

UG 10.12. WITHHOLDING OF GRADES

UG 10.12.1. Grades shall be withheld when the candidate has not paid his/her dues or when there is a disciplinary action pending against him/her.

UG 10.13. CONVERSION OF CGPA INTO PERCENTAGE

UG 10.13.1. Conversion formula for the conversion of CGPA into percentage is Percentage of Marks Scored = (CGPA Earned – 0.75) × 10

UG 11. PROMOTION CRITERIA AND ENROLLMENTS TO HIGHER SEMESTERS

UG 11.1. During registration to the higher semesters, the following criteria/conditions for promotion, shall be satisfied.



UG 11.1.1. A student shall 'Not Eligible' (NE) for writing SEE if he/she does not comply to the minimum prescribed attendance in any course that carry a credit.

Students shall register afresh for such course/s, whenever offered next, to meet the attendance requirements and secure a pass grade, subsequently in that course/s.

UG 11.1.2. In a semester (ODD / EVEN), a student is deemed to be Not Eligible (NE) if he/she does not satisfy minimum attendance requirements criteria in a credit course.

If this course happens to be a prerequisite to a connected course in the subsequent semester, then the student shall not be permitted to register for that connected course until he / she secures pass grade in the prerequisite course by complying to the minimum attendance requirement when the prerequisite course is offered next (either during summer term or regular semester).

UG 11.1.3. A student shall be permitted to register for FOUR credited courses or to a total of 16 credits whichever is higher along with pending audit courses, if any, during a summer term by paying the prescribed course registration fee per credit notified by the university from time to time.

UG 11.1.4. The students with NE ('NOT ELIGIBLE' due to shortage in attendance) in any Credit Course/s other than Audit Courses in a semester shall have to secure a pass grade by compliance to minimum attendance requirements in the NE course to register for connected courses if NE course happens to be prerequisite course for those connected courses offered in the subsequent semesters.

UG 11.1.5. Candidates who secure 'F' grade in any courses in regular semester or summer term shall secure PASS grade in such course/s either in the subsequent summer term examination or shall repeat in the next appropriate semester whenever it is/they are offered, i.e. odd semester courses during odd semesters examinations and even semester courses during even semester examinations, respectively.

UG 11.2. In case of failure in Practical/Workshop practice course the candidate in any semester may clear it in the subsequent summer term examination or semester examination.

UG 11.3. In case a candidate fails in Practical/ Workshop practice he/she shall register when it is offered next either in the summer term or subsequent semester, as the case may be.

UG 11.4. Candidates may add and drop course(s) with the concurrence of the Faculty Advisor, and under intimation to the concerned course instructors and the academic section provided this is done within the date mentioned in the Academic Calendar.



UG 11.5. SUMMER TERM & MAKEUP EXAMINATIONS

UG 11.5.1. A summer term program may be offered by a department and with the approval of the Dean.

UG 11.5.2. Summer term courses will be announced by the Academic Affairs Office at the end of the even semester and before the commencement of the end semester examination. A candidate will have to register for summer term courses by paying the prescribed fees within the stipulated time in the announcement.

UG 11.5.3. The total number of contact hours in any summer term program will be the same as in the regular semester course. The assessment procedure in a summer term course will also be like the procedure for a regular semester course.

UG 11.5.4. Candidates granted semester drop by the Board of Governors, on medical ground, shall be allowed to clear the concerned courses in summer term course and subject to conditions as stated under clauses 11.5.1, 11.5.2. and 11.5.3.

UG 11.5.5. The Candidates with “NE” grade shall register for summer term by paying the prescribed fees.

UG 11.5.6. Candidates who are awarded ‘F’ grades in regular semester examinations have the option to register for the concerned courses in summer term examinations to the conditions as stated under clauses 11.5.1, 11.5.2. and 11.5.3 above, or they can re-sit for subsequent semester/summer term examination only.

UG 11.5.7. Provision for make-up exam shall be available to the students who might have missed to attend the Semester / Annual end examinations of one or more courses for exceptional cases arising out of natural calamities / medical emergencies / death of a member in the family, with the permission of Faculty Advisor and Chairperson / Dean / Principal of the respective School/College. All such cases have to be exclusively to be approved by the Vice-Chancellor and ratified in the Academic Council / BOM / BOG. All such courses approved for makeup examinations are awarded a transitory grade “IC” (incomplete grade)

UG 11.5.8. The makeup examinations shall be held as notified in the academic calendar or through an exclusive notification duly approved by the Vice-chancellor.

UG 12. DURATION OF THE PROGRAMME



UG 12.1. Normally a candidate should complete all the requirements for undergraduate programme in four years. However, academically weaker candidates who do not fulfil some of the requirements in their first attempt and have to repeat them in subsequent semesters may be permitted up to eight consecutive years (from the first year of registration) to complete all the requirements of the degree.

UG 12.2. Normally a candidate under lateral entry should complete all the requirements for undergraduate programme in three years. However, academically weaker candidates who do not fulfil some of the requirements in their first attempt and have to repeat them in subsequent semesters may be permitted up to six consecutive years (from the second-year registration) to complete all the requirements of the degree.

UG 13. TERMINATION FROM THE PROGRAMME

UG 13.1. A candidate may also be compelled to leave the Program in the University on disciplinary grounds.

UG 13.2. On having been found to have produced false documents or having made false declaration at the time of seeking admission.

UG 13.3. On having been found to be pursuing regular studies and/or correspondence courses (leading to degree or diploma) in any other college, university, or an educational institution simultaneously.

UG 13.4. On having been found to be concurrently employed and performing duty or carrying out business in contravention to academic schedules of the University and without seeking approval from the University.

UG 13.5. If a student fails to earn a pass grade even after 4 attempts such a student is terminated from the university on the grounds of NOT FIT FOR THE PROGRAM (NFFTP).

UG 13.6. If a student secures a CGPA less than 4.0, 4 times during entire duration of the program of study, such a student is terminated from the university on the grounds of NOT FIT FOR THE PROGRAM (NFFTP).

UG 13.7. However, if the student appeals for reconsideration of termination from the university under NFFTP rule by providing the genuine reasons to the Vice- Chancellor through the Dean of Faculty, then the Vice-Chancellor may consider constituting a committee for the purpose of review and provide 2 additional attempts on the recommendations of the committee.



UG 14. TEMPORARY WITHDRAWAL FROM THE UNIVERSITY

UG 14.1. Candidate who has been admitted to an undergraduate programme of the University may be permitted to withdraw temporarily from the University on the grounds of prolonged illness or grave calamity in the family for a period of one semester or more, provided:

UG 14.1.1. He/she applies to the University within at least 6 weeks of the commencement of the semester or from the date he last attended his/her classes whichever is later, stating fully the reasons for such withdrawal together with supporting documents and endorsement of his/her guardian.

UG 14.1.2. The University is satisfied that, counting the period of withdrawal, the candidate is likely to complete his/her requirements of the B. Tech. Degree within the time limits specified in Clause 12.1 or 12.2 above.

UG 14.1.3. There are no outstanding dues or demands in the University / Hostel / Department / Library.

UG 14.1.4. Normally, a candidate will be permitted only one such temporary withdrawal during his/her tenure as a candidate of the undergraduate programme.

UG 15. TRANSFER OF CANDIDATES

UG 15.1. Transfer of candidates from higher education institutions outside university shall be considered at the beginning of Third and Fifth Semesters but subject to confirmation of equivalence.

UG 15.2. The candidates shall apply for equivalence with the No-objection for admission to DSU from the University where they are perusing their study.

UG 15.3. The candidates must have passed in all courses in the earlier semesters prior to transfer.

UG 16. ELIGIBILITY FOR THE AWARD OF B. Tech. DEGREE

A candidate shall be declared to be eligible for the award of B. Tech. degree if he/she has:

UG 16.1. Completed all the credit requirements for the degree with a CGPA 4.0 or higher at the end of the programme.

UG 16.2. Satisfactorily completed all the mandatory audit courses.



UG 16.3. No dues to the University, Department, Hostels.

UG 16.4. No disciplinary action pending against him/her.

UG 17. AWARD OF DEGREE

The award of B. Tech. degree must be recommended by the Academic Council and approved by the Board of Management and Board of Governors of the DSU.

UG 18. CONDUCT AND DISCIPLINE

UG 18.1. Candidates shall conduct themselves within and outside the precincts of the University in a manner befitting the candidates of an institution of national importance. The University has a separate ordinance Code and Conduct of Candidates which is applicable to all candidates of the University.

UG 19. REPEAL AND SAVINGS

Notwithstanding anything contained in these Regulations, the provisions of any guidelines, orders, rules or regulations in force at the University shall be inapplicable to the extent of their inconsistency with these Regulations. The Academic Council, Board of Management and Board of Governors of Dayananda Sagar University may revise, amend or change the regulations from time to time.

UG 20. INTERPRETATION

Any questions as to the interpretation of these Regulations shall be decided by the University, whose decision shall be final. The University shall have the powers to issue clarifications to remove any doubt, difficulty or anomaly which may arise during the implementation of the provisions of these regulations.



General Instructions:

- **Open Elective Courses:** At least two courses must be provided from each department and the courses shall be general course on emerging areas with broad coverage of syllabus so that student shall chose without any difficulty.
- **Honors Degree:** An Honors degree typically refers to a higher level of academic achievement in the major area. That is, certificate in his/her OWN major for Research orientation. The Credit requirement: **178 credits** (Major worth 160 credits + Honors 18 credits)
- **Minor Degree:** Minor is a secondary concentration of courses that often complements the honors. Minor in any OTHER branch for Improving Employability.
 - Minor is an option rather than a requirement for B. Tech students. They may opt for one of the Engineering or Non-engineering discipline as Minor, earning additional credits ranging from 18. However, students are permitted to choose only one Minor either from engineering or non-engineering discipline.
 - This opportunity is ideal for students who took a Major out of necessity but would still like to pursue their passion in another discipline or to enrich/equip them for a specific profession where greater job opportunities exist. Another advantage of opting for a Major with a Minor is to earn standing credits for pursuing a Master's degree abroad or within India too.
 - Only students who satisfy a set of minimum eligibility criteria set forth by the university and meet certain pre-requisites, will be permitted to opt for a Minor.
 - Credit requirement: **178 credits** (Major worth 160 credits + Minor 18 credits)
 - Degree nomenclature: The degree will contain the Major / Major with Specialization. The Minor pursued by the student will be provided in the transcript along with details on courses completed and associated credits earned.
 - For e.g., For a student who pursued Computer Science and Engineering with a Minor in Industrial Psychology, the degree will read “B. Tech in Computer Science and Engineering”, Transcripts of B. Tech will reflect the Minor courses and the Minor certificate in Industrial Psychology will be issued separately.



PART-B

SCHEME AND SYLLABUS FOR B.TECH. CST (FIRST TO FOURTH YEARS) PROGRAMME

Definitions / Descriptions

Definition of Credit:	
1 Hour Lecture (L) Per Week	01 Credit
1 Hour Tutorial (T) Per Week	0.5 Credit
1 Hour Practical (P) Per Week	0.5 Credit
1 Hour Project (J) Per Week	0.5 Credit

Course code and Definition:	
BSC	Basic Science Courses
ESC	Engineering Science Courses
HSMC	Humanities and Social Sciences including Management Courses
IPCC	Integrated Professional Core Course
PCC	Professional Core Courses
PEC	Professional Elective Courses
OEC	Open Elective Courses
SEC	Skill Enhancement Courses
UHV	Universal Human Value Course
PROJ	Project Work
INT	Internship



SCHEME 2025 – 2029 Batch

I SEMESTER (CHEMISTRY CYCLE)

S.NO	Course Type	Course Code	Course Name	Teaching Hours / Week				Examination			Credits
				Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	
1	BSC	25EN1101	LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS	3	1	0	0	60	40	100	4
2	ESC	25EN1102	ENGINEERING GRAPHICS AND DESIGN THINKING	2	1	2	0	60	40	100	4
3	BSC	25EN1103	CHEMISTRY FORCOMPUTER SCIENCE CLUSTER	2	1	2	0	60	40	100	4
4	BSC	25EN1104	CHEMISTRY FOR ECE	2	1	2	0	60	40	100	4
5	BSC	25EN1105	CHEMISTRY FOR MECHANICAL CLUSTER	2	1	2	0	60	40	100	4
6	BSC	25EN1106	CHEMISTRY FOR CSME	2	1	2	0	60	40	100	4
7	ESC	25EN1107	ENGINEERING SCIENCE COURSE –I for Computer science Cluster Object Oriented Programming	3	0	0	0	60	40	100	3
8	ESC	25EN1108	ENGINEERING SCIENCE COURSE– I for ECE Introduction to Electrical Engineering	3	0	0	0	60	40	100	3
9	SEC	25EN1109	ENGINEERING SCIENCE COURSE – I for Mechanical Cluster Introduction to Electrical and Electronics Engineering	3	0	0	0	60	40	100	3
10	BSC	25EN1110	TECHNICAL ENGLISH	2	0	0	0	100	-	100	2
11	HSMC	25EN1111	ENVIRONMENTAL SCIENCE	2	0	0	0	100	-	100	2
12	HSMC	25EN1112	KANNADA KALI / MANASU	1	0	0	0	50	-	50	1
13	SEC	25EN1113	COGNITIVE AND TECHNICAL SKILLS -I								P/F
			Total	15	3	4	0	490	160	650	20

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.

ENGINEERING SCIENCE COURSE – I: Computer Science Cluster: Object Oriented Programming

ECE: Introduction to Electrical Engineering Mechanical Cluster: Introduction to Electrical and Electronics Engineering



I SEMESTER (PHYSICS CYCLE)

S.NO	Course Type	Course Code	Course Name		Teaching Hours / Week				Examination				Credits
					Lecture	Tutorial	Practical	Project		CIE Marks	SEE Marks	Total Marks	
1	BSC	25EN1101	LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS		3	1	0	0		60	40	100	4
2	ESC	25EN1114	C PROGRAMMING FOR PROBLEM SOLVING		2	1	2	0		60	40	100	4
3	BSC	25EN1115	PHYSICS FOR COMPUTER SCIENCE CLUSTER		3	0	2	0		60	40	100	4
4	BSC	25EN1116	PHYSICS FOR ECE		3	0	2	0		60	40	100	4
5	BSC	25EN1117	PHYSICS FOR MECANICAL CLUSTER		3	0	2	0		60	40	100	4
6	ESC	25EN1109	ENGINEERING SCIENCE COURSE – II for Computer Science cluster Introduction to Electrical and Electronics Engineering		3	0	0	0		60	40	100	3
7	ESC	25EN1118	ENGINEERING SCIENCE COURSE – II for ECE Introduction to Electronics Engineering		3	0	0	0		60	40	100	3
8	ESC	25EN1119	ENGINEERING SCIENCE COURSE – II for Mechanical cluster Engineering Mechanics		3	0	0	0		60	40	100	3
9	ESC	25EN1120	INTRODUCTION TO SUSTAINABLE ENGINEERING		2	0	0	0		100	-	100	2
10	ESC	25EN1121	BIOLOGY FOR ENGINEERS		2	0	0	0		100	-	100	2
11	UHV	25EN1122	CONSTITUTION OF INDIA AND PROFESSIONAL ETHICS		1	0	0	0		50	-	50	1
12	SEC	25EN1113	COGNITIVE AND TECHNICAL SKILLS – I								-		P/F
			Total		15	2	4	0		490	160	650	20

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.

ENGINEERING SCIENCE COURSE – II:

Compute Science Cluster: Introduction to Electrical and Electronics Engineering

ECE: Introduction to Electronics Engineering

Mechanical Cluster: Engineering Mechanics



II SEMESTER (CHEMISTRY CYCLE)

S.NO	Course Type	Course Code	Course Name		Teaching Hours / Week				Examination				Credits
					Lecture	Tutorial	Practical	Project		CIE Marks	SEE Marks	Total Marks	
1	BSC	25EN1201	SINGLE AND MULTIVARIATE CALCULUS		3	1	0	0		60	40	100	4
2	ESC	25EN1102	ENGINEERING GRAPHICS AND DESIGN THINKING		2	1	2	0		60	40	100	4
3	BSC	25EN1103	CHEMISTRY FORCOMPUTER SCIENCE CLUSTER		2	1	2	0		60	40	100	4
4	BSC	25EN1104	CHEMISTRY FOR ECE		2	1	2	0		60	40	100	4
5	BSC	25EN1105	CHEMISTRY FOR MECHANICAL CLUSTER		2	1	2	0		60	40	100	4
6	BSC	25EN1106	CHEMISTRY FOR CSME		2	1	2	0		60	40	100	4
7	ESC	25EN1107	ENGINEERING SCIENCE COURSE– I for Computer science Cluster Object Oriented Programming		3	0	0	0		60	40	100	3
8	ESC	25EN1108	ENGINEERING SCIENCE COURSE – I for ECE Introduction to Electrical Engineering		3	0	0	0		60	40	100	3
9	ESC	25EN1109	ENGINEERING SCIENCE COURSE – I for Mechanical Cluster Introduction to Electrical and Electronics Engineering		3	0	0	0		60	40	100	3
10	BSC	25EN1110	TECHNICAL ENGLISH		2	0	0	0		100	–	100	2
11	AEC	25EN1111	ENVIRONMENTAL SCIENCE		2	0	0	0		100	–	100	2
12	BSC	25EN1112	KANNADA KALI / MANASU		1	0	0	0		50	–	50	1
			Total		15	3	4	0		490	160	650	20

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.

ENGINEERING SCIENCE COURSE – I:

Computer Science Cluster: Object Oriented Programming

ECE: Introduction to Electrical Engineering

Mechanical Cluster: Introduction to Electrical and Electronics Engineering



II SEMESTER (PHYSICS CYCLE)

S.NO	Course Type	Course Code	Course Name		Teaching Hours / Week				Examination				
					Lecture	Tutorial	Practical	Project		CIE Marks	SEE Marks	Total Marks	Credits
1	BSC	25EN1201	SINGLE AND MULTIVARIATE CALCULUS		3	1	0	0		60	40	100	4
2	ESC	25EN1114	C PROGRAMMING FOR PROBLEM SOLVING		2	1	2	0		60	40	100	4
3	BSC	25EN1115	PHYSICS FOR COMPUTER SCIENCE CLUSTER		3	0	2	0		60	40	100	4
4	BSC	25EN1116	PHYSICS FOR ECE		3	0	2	0		60	40	100	4
5	BSC	25EN1117	PHYSICS FOR MECANICAL CLUSTER		3	0	2	0		60	40	100	4
6	ESC	25EN1109	ENGINEERING SCIENCE COURSE – II for Computer Science cluster Introduction to Electrical and Electronics Engineering		3	0	0	0		60	40	100	3
7	ESC	25EN1118	ENGINEERING SCIENCE COURSE – II for ECE Introduction to Electronics Engineering		3	0	0	0		60	40	100	3
8	ESC	25EN1119	ENGINEERING SCIENCE COURSE – II for Mechanical cluster Engineering Mechanics		3	0	0	0		60	40	100	3
9	ESC	25EN1120	INTRODUCTION TO SUSTAINABLE ENGINEERING		2	0	0	0		100	-	100	2
10	AEC	25EN1121	BIOLOGY FOR ENGINEERS		2	0	0	0		100	-	100	2
11	HS MC	25EN1122	CONSTITUTION OF INDIA AND PROFESSIONAL ETHICS		1	0	0	0		50	-	50	1
12	SEC	25EN1202	COGNITIVE AND TECHNICAL SKILLS –II								-		P/F
			Total		15	2	4	0		490	160	650	20

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.

ENGINEERING SCIENCE COURSE – II:

Compute Science Cluster: Introduction to Electrical and Electronics Engineering

ECE: Introduction to Electronics Engineering

Mechanical Cluster: Engineering Mechanics



III SEMESTER

S.NO	Course Type	Course Code	Course Name	Teaching Department	Teaching Hours / Week				Examination			Credits
					Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	
					L	T	P	J	CIE Marks	SEE Marks	Total Marks	
1	BSC	25CT2301	Applied Statistics & Stochastic Processes	MAT	3	0	0	0	60	40	100	3
2	PCC	25CT2302	Logic Design & Computer Organization Architecture	CST	3	0	0	0	60	40	100	3
3	IPCC	25CT2302	Database Management System	CST	3	0	2	0	60	40	100	4
4	IPCC	25CT2304	Data Structures Using C	CST	2	0	2	0	60	40	100	3
5	IPCC	25CT2305	Sensors, Systems & IoT Fundamentals	CST	3	0	2	0	60	40	100	4
6	PCC	25CT2306	Sustainability Engineering & ESG	CST	2	0	0	0	60	40	100	2
7	SEC	25CT23XX	Skill Enhancement Course I	CST	1	0	0	2	100	--	100	2
8	SEC	25CT2311	Cognitive and Technical Skills – III	All Dept.	0	0	0	0	--	--	--	P/ F
Total					17	0	6	2	460	240	700	21

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.



DAYANANDA SAGAR
UNIVERSITY



SCHOOL OF
ENGINEERING

Devarakaggalahalli, Harohalli, Kanakapura
Road, Bengaluru South District, Karnataka – 562 112

Skill Enhancement Course – I						
S.NO	Course Code	Course Name	L	T	P	J
1	25CT2307	AI Powered -Full Stack Web Development	1	0	0	2
2	25CT2308	Git Hub & Version Control	1	0	0	2
3	25CT2309	Indian Knowledge Systems	2	0	0	0
4	25CT2310	Low Code/No Code Development	1	0	0	2
5	XXXXXX	MOOC	2	0	0	0



IV SEMESTER												
S.NO	Course Type	Course Code	Course Name	Teaching Department	Teaching Hours / Week			Examination				Credits
					Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	
					L	T	P	J				
1	BSC	25CT2401	Differential Equations & Optimization	MAT	3	0	0	0	60	40	100	3
2	PCC	25CT2402	Operating Systems for GPUs	CST	3	0	0	0	60	40	100	3
3	IPCC	25CT2403	Design and Analysis of Algorithms	CST	3	0	2	0	60	40	100	4
4	IPCC	25CT2404	Machine Learning	CST	3	0	2	0	60	40	100	4
5	SEC	25CT2405	Design Studio II: Innovation Design Thinking & IP	CST	1	0	0	2	60	40	100	2
6	PCC	25CT2406	Introduction to Data Science	CST	2	0	0	0	60	40	100	2
7	HSM C	25LS00XX	Humanities & Social Sciences: Liberal Studies	All dept.	2	0	0	0	100	--	100	2
8	HSM C	25CT24XX	Skill Enhancement Course II	CST	1	0	0	2	100	--	100	2
9	SEC	25CT2412	Cognitive and Technical Skills – IV	All Dept.	0	0	0	0	--	--	--	P/F
Total					18	0	4	4	560	240	800	22

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.



Skill Enhancement Course – II

S.NO	Course Code	Course Name	L	T	P	J
1	25CT2407	OOP Using Java	1	0	0	2
2	25CT2408	DevOps Fundamentals & Product Launch	1	0	0	2
3	25CT2409	R Programming	1	0	0	2
4	25CT2410	Introduction to Robotics	1	0	0	2
5	25CT2411	Accelerated Computing with CUDA	1	0	0	2

Regular Liberal Studies Courses

Sl. No.	Course Code	Course Title
1	25LS0001	Introduction to Japanese Language
2	25LS0002	Introduction to German Language
3	25LS0003	Law for Engineers
4	25LS0004	Introduction to Painting
5	25LS0005	Vedic Mathematics
6	25LS0006	Fundamentals of Critical Thinking
7	25LS0007	Cyber Crimes, Policies & Laws
8	25LS0008	Introduction to Film Studies
9	25LS0009	Practicing Yoga & Meditation
10	25LS0010	Universal Human Values
11	25LS0011	Data Governance

MOOC Courses

Sl. No.	Course Code	Course Title
1	*CID	Enhancing Soft Skills and Personality [NPTEL]
2	*CID	Soft Skill Development [NPTEL]

Note: CID = NPTEL Course ID



V SEMESTER

S.NO	Course Type	Course Code	Course Name	Teaching Department	Teaching Hours / Week				Examination			Credits
					Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	
					L	T	P	J				
1	PCC	25CT3501	Responsible AI, Ethics & Policy	CST	2	0	0	0	60	40	100	2
2	IPCC	25CT3502	Deep Learning	CST	3	0	2	0	60	40	100	4
3	IPCC	25CT3503	Computer Networks & Distributed Systems	CST	2	1	2	0	60	40	100	4
4	PCC	25CT3504	AI-Enabled Software Systems and Agile Project Management	CST	3	0	0	0	60	40	100	3
5	PCC	25CT3505	Small E-Business Launch	CST	1	0	0	2	60	40	100	2
6	SEC	25CT3506	Design Studio II: AI-Enabled Systems, Digital-Physical Systems	CST	1	0	0	2	100	--	100	2
7	PEC	25CT35XX	Professional Elective I / MOOC	CST	3	0	0	0	60	40	100	3
8	SEC	25CT3512	Cognitive and Technical Skills – V	Any Dept.	0	0	0	0	--	--	--	P/F
Total					15	1	4	4	460	240	700	20

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.

NOTE: For Professional Elective Courses (PEC), the LTPJ division is given on the next page according to the type of course.



Professional Elective Course – I / MOOC/ Certification						
<u>S.N</u> <u>Q</u>	Course Code	Course Name	L	T	P	J
1	25CT3507	Data Science & Visualization	2	0	0	2
2	25CT3508	Cyber Security Fundamentals	2	0	0	2
3	25CT3509	Interactive Art and Creative Coding	2	0	0	2
4	25CT3510	Introduction to Quantum Computing	3	0	0	0
5	25CT3511	Product Strategy & Management	3	0	0	0

MOOC Courses

Sl. No.	Course Code	Course Title
1	*CID	Data Analytics and Visualization with MS PowerBI [IIMB] 6 WEEKS Data Analytics with Python [NPTEL] 12 WEEKS
2	*CID	Practical Cyber Security for Cyber Security Practitioners, IIT Kanpur [NPTEL] 12 WEEKS
3	*CID	Quantum Computation and Quantum Information [NPTEL] 12 WEEKS
4	*CID	Product and Brand Management, IIT Roorkee [NPTEL] 12 WEEKS

Note: CID = NPTEL Course ID



VI SEMESTER

S.NO	Course Type	Course Code	Course Name	Teaching Department	Teaching Hours / Week				Examination			Credits
					Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	
					L	T	P	J				
1	PCC	25CT3601	Sustainable Software Engineering	CST	3	0	0	0	60	40	100	3
2	PCC	25CT3602	Lean Start-up Methodology and Product Marketing	CST	3	0	0	2	60	40	100	4
3	IPCC	25CT3603	Natural Language Processing for GenAI	CST	2	0	2	0	60	40	100	3
4	PCC	25CT3604	Theory of Computation & Compiler Design	CST	2	1	0	0	60	40	100	3
5	PEC	25CT36XX	Professional Elective II / MOOC	CST	3	0	0	0	60	40	100	3
6	PROJ	25CT3610	Minor Project	CST	0	0	0	4	100	--	100	2
7	OEC	25OE36XX	Open Elective I	All. Depts	3	0	0	0	60	40	100	3
8	SEC	25CT3611	Cognitive And Technical Skills – VI	Any Dept.	0	0	0	0	--	--	--	P/F
Total					16	1	2	6	460	240	700	21

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.

NOTE1: For Professional Elective Courses (PEC), the LTPJ division is given on the next page according to the type of course.

NOTE2: Internship: All the students admitted to III year shall have to undergo mandatory internship of 4 weeks during the VII and VIII semesters. A university examination shall be conducted during VIII semester and the prescribed credit shall be included in VIII semester. Internship shall be considered as a head of passing and shall be considered for the award of degree. Those, who do not take up/complete the internship shall be declared fail and shall have to complete during subsequent University examination after satisfying the internship requirements.



Open Electives-I

S.N O	Course Code	Course Name	L	T	P	J
1	25OE36XX	Small E-Business Launch	2	0	0	2
2	25OE36XX	Lean Startup Methodology	2	0	0	2

Professional Elective Course – II / MOOC/ Certification

S.NO	Course Code	Course Name	L	T	P	J
1	25CT3605	Computer Vision	3	0	0	0
2	25CT3606	Cryptography & Cyber Security	2	0	0	2
3	25CT3607	Gaming Design Fundamentals	2	0	0	2
4	25CT3608	Quantum Algorithms	2	0	0	2
5	25CT3609	Business Management using Cloud	3	0	0	0

MOOC Courses

Sl. No.	Course Code	Course Title
1	*CID	Modern Computer Vision, IIT Madras [NPTEL] 12 WEEKS
2	*CID	Cryptography and Network Security, IIT Kharagpur [NPTEL] 12 WEEKS
3	*CID	Quantum Computing: Algorithms and Limitations Through the Query Model [NPTEL] 12 WEEKS

Note: CID = NPTEL Course ID



VII SEMESTER

VII SEMESTER												
S.NO	Course Type	Course Code	Course Name	Teaching Department	Teaching Hours / Week				Examination			Credits
					Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	
					L	T	P	J				
1	PCC	25CT4701	Entrepreneurial Finance & Deep-Tech Start-ups	CST	2	0	0	0	100	--	100	2
2	PCC	25CT4702	AI in Healthcare	CST	3	0	0	2	60	40	100	4
3	PEC	25CT47XX	Professional Elective III	CST	3	0	0	0	60	40	100	3
4	PEC	25CT47XX	Professional Elective IV	CST	3	0	0	0	60	40	100	3
5	OEC	25OE47XX	Open Elective II	All. Dept.	3	0	0	0	60	40	100	3
6	PROJ	25CT4713	Capstone Project I	CST	0	0	0	8	60	40	100	4
			Total		14	0	0	10	400	200	600	19

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.

NOTE: For Professional Elective Courses (PEC), the LTPJ division is given on the next page according to the type of course.



Open Electives-II						
<u>S.NO</u>	Course Code	Course Name	L	T	P	J
1	25OE47XX	Innovation for Sustainable Business Management	2	0	0	2
2	25OE47XX	Product Analytics	2	0	0	2

Professional Elective Course – III / MOOC/ Certification						
<u>S.N O</u>	Course Code	Course Name	L	T	P	J
1	25CT4703	Building LLM with Prompt engineering	3	0	0	0
2	25CT4704	IoT-Based Data Analytics for Health Care	2	0	0	2
3	25CT4705	Game Development using Unity/ Game Development Using Godot	2	0	0	2
4	25CT4706	Quantum Machine Learning	2	0	0	2
5	25CT4707	Business to Business Marketing	3	0	0	0

MOOC Courses

Sl. No.	Course Code	Course Title
1	*CID	Introduction To Internet Of Things, IIT Kharagpur [NPTEL]

Note: CID = NPTEL Course ID



Professional Elective Course – IV / MOOC/ Certification						
<u>S.NO</u>	Course Code	Course Name	L	T	P	J
1	25CT4708	Generative AI with Diffusion Models	3	0	0	0
2	25CT4709	Blockchain Technology	2	0	0	2
3	25CT4710	AR/VR & Game-Theoretic/ Algorithmic Game Theory	2	0	0	2
4	25CT4711	Quantum Artificial Intelligence	2	0	0	2
5	25CT4712	Sustainable Innovation Business	3	0	0	0

MOOC Courses

Sl. No.	Course Code	Course Title
1	*CID	Blockchain and its Applications, IIT Kharagpur [NPTEL] 12 WEEKS

Note: CID = NPTEL Course ID



VIII SEMESTER

S.NO	Course Type	Course Code	Course Name	Teaching Department	Teaching Hours / Week				Examination			Credits
					Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	
1	PEC	25CT4801	Leadership, Policy & Authentic Intelligence	CST	2	0	0	0	100	--	100	2
2	PCC	25CT48XX	Professional Elective V / MOOC	CST	3	0	0	0	60	40	100	3
3	INT	25CT4807	Internship	CST	0	0	0	4	100	--	100	2
4	PROJ	25CT4808	Capstone Project II	CST	0	0	0	20	60	40	100	10
			Total		5	0	0	24	320	80	400	17

L – Lecture, T – Tutorial, P – Practical, J – Project, CIE – Continuous Internal Evaluation, SEE- Semester End Examinations.

NOTE 1: Internship

Completed during the intervening vacations of VI and VII semesters and /or VII and VIII semesters or VIII semesters



Professional Elective Course – V / MOOC/ Certification						
S.NO	Course Code	Course Name	L	T	P	J
1	25CT4802	Agentic AI and RAG Engineering	3	0	0	0
2	25CT4803	Business Intelligence & Analytics	2	0	0	2
3	25CT4804	Unreal Engine Game Development for Beginners	2	0	0	2
4	25CT4805	Quantum Cryptography	2	0	0	2
5	25CT4806	Digital Business	3	0	0	0

MOOC Courses

Sl. No.	Course Code	Course Title
1	*CID	Quantum Algorithms and Cryptography, IIT Madras [NPTEL] 12 WEEKS
2	*CID	Foundation of Digital Business, IIT Kharagpur [NPTEL] 8 WEEKS Business Intelligence & Analytics[NPTEL] 4 WEEKS

Note: CID = NPTEL Course ID



NOTE: Total Credits (I-Sem to VIII Sem) = 160 credits.

Year	Sem	Nu. of Credits	Per Year Credits	Total Credits
I	Sem 1	20	40	160
	Sem 2	20		
II	Sem 3	21	43	
	Sem 4	22		
III	Sem 5	20	41	
	Sem 6	21		
IV	Sem 7	19	36	
	Sem 8	17		



Elective courses domain-wise

S.N	Domain-wise	Domain Clusters	PROFESSIONAL ELECTIVE COURSES				
			PEC-I	PEC-II	PEC-III	PEC-IV	PEC-V
			5 th Semester	6 th Semester	7 th Semester		8 th Semester
			Course Name	Course Name	Course Name	Course Name	Course Name
1	Domain-1	Cognitive AI & Intelligent Systems	Data Science & Visualisation	Computer Vision	Building LLM with Prompt engineering	Generative AI with Diffusion Models	Agentic AI and RAG Engineering
2	Domain-2	Smart Security Systems	Cyber Security Fundamentals	Cryptography & Cyber Security	IoT-Based Data Analytics for Health Care	Blockchain Technology	Business Intelligence & Analytics
3	Domain-3	Interactive Digital Media	Interactive Art and Creative Coding	Gaming Design Fundamentals	Game Development Using Unity/ Game Development Using Godot	AR/VR & Game-Theoretic/ Algorithmic Game Theory	Unreal Engine Game Development for Beginners
4	Domain-4	Quantum Computing	Introduction to Quantum Computing	Quantum Algorithms	Quantum Machine Learning	Quantum Artificial Intelligence	Quantum Cryptography
5	Domain-5	Technology Innovation & Entrepreneurship	Product Strategy & Management	Business Management using Cloud	Business-to-Business Marketing	Sustainable Innovation Business	Digital Business