

**DHANALAKSHMI SRINIVASAN UNIVERSITY  
(STATE PRIVATE UNIVERSITY), SAMAYAPURAM,  
TIRUCHIRAPALLI, TAMILNADU, INDIA**



**BACHELOR OF TECHNOLOGY (B.Tech.)  
UNDERGRADUATE DEGREE PROGRAMME - FULL TIME  
ENGINEERING AND TECHNOLOGY**

**REGULATIONS - 2023  
(This Regulations Supersedes Regulations 2021)**

**(CBCS)**



# DHANALAKSHMI SRINIVASAN UNIVERSITY

Samayapuram, Tiruchirappalli, Tamil Nadu - 621112.

## Rules and Regulations of Engineering and Technology

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## Index – Regulations 2023

Sl. No.	Contents	Page No.
	Cover Page	i
	Approving Authority	ii
	Index – Regulations 2023	iii
1.	Short Title	1
2.	Preamble	1
3.	Preliminary Definitions and Nomenclature	1
4.	Duration of the Programme	3
5.	Medium of Instruction	4
6.	Fee Structure	4
7.	Eligibility for Admission - Academic qualifications	4
8.	Programmes offered	4
9.	Selection of Students	5
10.	Registration	5
11.	Commencement of the Programme	5
12.	Working Days in a Semester	5
13.	Transfer – Admission of Students	5
14.	Break of Study	5
15.	Readmission after Break in study or discontinuation	5
16.	Curriculum and Syllabus	5
17.	MOOCs / SWAYAM / NPTEL / Blended Mode of Learning/Credit Transfer	8
18.	Flexibility to change the programme of study	8
19.	Registration of courses in a semester and Dropping of a course	8
20.	Assessment and Attendance Eligibility for appearing in University Examination	9
21.	Passing Requirements – Theory and Practical Courses	11
22.	Class In-charge	12
23.	Faculty Advisor / Mentor	12
24.	Class Committee	13
25.	Course Committee For Common Courses	13

26.	Award of Degree - Eligibility	14
27.	Bachelor's Degree Programme with Specialization	14
28.	Bachelor's Degree Programme with Honours	14
29.	Bachelor's Degree Programme with Minor Degree	14
30.	Performance Grades	14
31.	Successful Candidates for Award of Degree - Classification	15
32.	Approval of Final Results for Certificates and Transcripts	16
33.	Ranking	16
34.	Modifications of Regulations	16
	Annexure I - Programme Outcomes (POs)	17

# **DHANALAKSHMI SRINIVASAN UNIVERSITY**

**(STATE PRIVATE UNIVERSITY)**

**SAMAYAPURAM, TIRUCHIRAPALLI, TAMILNADU, INDIA**

## **ENGINEERING AND TECHNOLOGY**

### **BACHELOR OF TECHNOLOGY (B.Tech.)**

**Full Time Degree Programme**

#### **REGULATIONS – 2023**

**{CHOICE BASED CREDIT SYSTEM (CBCS)}**

**(This regulations supersedes previous regulations 2021 and will be applicable for the students admitted from academic year 2021-22 onwards)**

Dhanalakshmi Srinivasan University, Tiruchirapalli, Tamil Nadu issues the regulations and shall apply to all the Bachelor's Degree Engineering Programmes offered by the Dhanalakshmi Srinivasan University, Tiruchirapalli under School of Engineering and Technology. The system of instructions and education in the engineering programmes will be Choice Based Credit System (CBCS).

#### **1. Short Title**

These revised regulations shall be called '**Bachelor's Degree Engineering Regulations 2023**'. These regulations **come into force for the students admitted from Academic year 2021-22** and are subject to modifications as may be approved by the apex bodies of the University time to time.

#### **2. Preamble**

The Bachelor's Degree in School of Engineering and Technology shall be awarded to a student who as per these regulations has successfully undergone the programme, passed the prescribed examinations and thereby qualified to receive the degree.

#### **3. Preliminary Definitions and Nomenclature**

In the Regulations, unless the context otherwise requires, certain terms used in the form of abbreviation and their meanings are as under.

- |            |                    |   |
|------------|--------------------|---|
| <b>3.1</b> | AC                 | Academic Council, the highest academic body of the University, headed by the Vice Chancellor.   |
| <b>3.2</b> | Academic Calendar: | Academic calendar shall be prepared by the Dean for every academic year comprising of odd and even semesters and it will include the commencement and closing date of the semester, date of internal as well as external assessment tests and exams for both theory and practical courses, inter-semester break and summer/winter holidays for all the undergraduate programmes. The Dean of the School shall schedule the academic activities within the specified period without deviation. Vice Chancellor's approval will be necessary for deviation, if any. |
| <b>3.3</b> | Academic Year      | A period consisting of two consecutive semesters including the inter-semester break as announced by the University/ Deans of respective Schools. The first  |

year of study shall be the first and second semesters following the admission of student. The second year will have third and fourth semesters; the third year will have fifth and sixth semesters and the fourth year will have seventh and eighth semesters. In general, the academic year will start from 01<sup>st</sup> July of previous year and ends on 30<sup>th</sup> of June next year.

<b>3.4</b>	AB	Absent
<b>3.5</b>	AICTE	All India Council for Technical Education, New Delhi.
<b>3.6</b>	B.Tech.	Bachelor of Technology
<b>3.7</b>	Management Committee	Management committee is the highest governing body of the University.
<b>3.8</b>	BoS	Board of Studies of the University under the Faculty of Engineering and Technology.
<b>3.9</b>	CBCS	Choice Based Credit System  In CBCS, the students are provided flexibility to choose courses as per their choice in each semester fulfilling the minimum and maximum credits requirement.
<b>3.10</b>	CGPA	Cumulative Grade Point Average
<b>3.11</b>	COs	Course Outcomes to be achieved on completion of a course.
<b>3.12</b>	CoE	Controller of Examinations of the University.
<b>3.13</b>	Commencement and Closure of Semesters	The date of commencement and closure of semesters as well as inter-semester break shall be announced by the Dean of the school. The schedule of the final theory examinations shall be announced by the Controller of Examinations in consultation with the Dean of School.
<b>3.14</b>	Course	Subject of study offered by various departments.
<b>3.15</b>	Credit	Course taught in a semester based on hours conducted/week. 01 hour lecture/tutorial and 02 hour practical per week is equivalent to 01 credit.
<b>3.16</b>	Curriculum and Syllabus	List of approved courses for Degree Programme as prescribed by the Board of Studies (BoS) with the approval of the Academic Council (AC).
<b>3.17</b>	Dean	Head of the institution of the School.
<b>3.18</b>	EA	External Assessment
<b>3.19</b>	Faculty	Professors, Associate Professors and Assistant Professors engaged in teaching of the students and assisting the students in the conduct of studies and Research in the School/University.
<b>3.20</b>	HoD	Head of the Department.
<b>3.21</b>	IA	Internal Assessment
<b>3.22</b>	MoE	Ministry of Education.
<b>3.23</b>	MOOCs	Massive Open Online Courses
<b>3.24</b>	NCC	National Cadet Corps
<b>3.25</b>	NPTEL	National Programme on Technology Enhanced Learning
<b>3.26</b>	NSS	National Service Scheme
<b>3.27</b>	OBE	Outcome Based Education  Framing syllabus with COs by implementation of Bloom's taxonomy in various levels of learning (Remember, Understand, Apply, Analyse, Evaluate and Create) to achieve Pos, PSOs, and PEOs.
<b>3.28</b>	POs	Program outcomes are twelve general graduate attributes given by National Board of

		Accreditation (NBA) to be achieved by the student after completion of a 4 years engineering degree programme.
3.29	Programme	Under Graduate Programme leading to the award of B.Tech. Degree approved by UGC and AICTE.
3.30	PSOs	Programme Specific Outcomes are specific to discipline and to be achieved by the student after completion of a 4 years engineering degree programme.
3.31	PEOs	Programme Educational Objectives are specific to discipline and to be achieved by the student in next 4 years after completion of 4 years engineering degree programme. The student will have exposure to industry, corporate etc. which will make the student to achieve advanced hands on skills and knowledge.
3.32	RA	Reappear
3.33	Re-examination/ Reappearance	Examination appeared for the failed courses by a student without undergoing regular classes in a semester.
3.34	Re-do/ Re-register	Applicable for the student who were not eligible for appearing in examinations due to lack of minimum attendance requirements or could not attend the course in the semester in which course is offered. The student should get permission from the School Dean to Re-do/ Re-Register the course.
3.35	SWAYAM	Study Webs of Active Learning for Young Aspiring Minds
3.36	UGC	University Grants Commission.
3.37	University	Dhanalakshmi Srinivasan University, Tiruchirapalli, Tamil Nadu, India.
3.38	University Physical Education Department	The department responsible to conduct various sports and games activities in the university.
3.39	VC	Vice - Chancellor of the University.
3.40	Working Days and Working Hours	Except Sunday and other listed holidays by Tamil Nadu Govt., all other days of the week are working days for the students.  Normal Working Hours: 9.00 a.m. to 5.00 p.m.  Depending upon the need, the respective Dean will decide about the working days and timings.
3.41	YRC	Youth Red Cross.

#### 4. Duration of the Programme

##### 4.1 B.Tech. – Regular (From 1st Semester)

The duration of the Bachelor's Degree Regular Programmes shall extend **over a period of 4 years (8 semesters) for the students admitted in first semester and not more than 8 years (16 semesters).**

##### 4.2 B.Tech. – Regular – Lateral Entry (From 3rd Semester)

The duration of the Bachelor's Degree Lateral Entry Programmes shall extend **over a period of 3 years (6 semesters) for the students admitted in third semester and not more than 6 years (12 semesters).**

4.3 The total duration for completion of the Bachelor's Degree Programmes start from the commencement of the first semester to which the student was admitted and should not exceed the maximum duration specified. Also no student will be allowed to complete Bachelor's Degree Programmes in less than 8 semesters.

4.4 The academic year is divided into **two Semesters, odd semester normally starts from July to December and the even semester from January to June.**

## 5. Medium of Instruction

The medium of instruction for all academic activities will be English, except for foreign languages programmes other than English.

## 6. Fee Structure

The fee structure of the programmes shall be fixed by the fee fixation committee constituted by the University.

## 7. Eligibility for Admission - Academic qualifications

### 7.1 Bachelor's Degree Programmes - All programmes – 04 Years Duration

Should have passed the Higher Secondary Examinations of (10+2) Curriculum (Academic Stream) prescribed by the Government of Tamil Nadu with Mathematics, Physics Chemistry and Biology as three of the four subjects of study under Part-III or any examination of any other University or authority accepted by the Syndicate of Anna University as equivalent thereto.

(OR)

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

**(The university will offer suitable bridge courses such as Mathematics, Physics, Engineering drawing, etc. for the students coming from diverse backgrounds to prepare level playing field and desired learning outcomes of the programme.)**

### 7.2 Lateral Entry Admission - Bachelor's Degree Programmes – 03 Years Duration

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

(OR)

7.2.2 The candidates who possess the Degree in Science (B.Sc.) (10+2+3 stream) with Mathematics as a subject at the B.Sc. Level are eligible to apply for Lateral entry admission to the third semester of B.Tech.

**(The university will offer suitable bridge courses such as Mathematics, Physics, Engineering drawing, etc. for the students coming from diverse backgrounds to prepare level playing field and desired learning outcomes of the programme.)**

## 8. Programmes offered

University offers the engineering programmes as mentioned below and are subjected to addition or removal of the programmes depending on the decision taken by subsequent BoS and further approval of the university as per university rules.

### **PROGRAMMES OF STUDY – B.Tech. DEGREE AND MINIMUM CREDITS FOR AWARDING THE DEGREE**

Sl. No.	UG Degree	Programme	Minimum Credits to be earned for awarding the Degree
1.	B.Tech.	Agricultural Engineering	<b>160 for regular students and 110 for lateral entry students.</b>
2.	B.Tech.	Artificial Intelligence and Data Science	
3.	B.Tech.	Artificial Intelligence and Machine Learning	
4.	B.Tech.	Biotechnology	
5.	B.Tech.	Biomedical Engineering	
6.	B.Tech.	Computer Science and Engineering	
7.	B.Tech.	Computer Science and Engineering (Cyber Security)	
8.	B.Tech.	Computer Science and Engineering (IoT)	
9.	B.Tech.	Electronics and Communication Engineering	
10.	B.Tech.	Electrical and Electronics Engineering	
11.	B.Tech.	Mechanical Engineering	
12.	B.Tech.	Information Technology	



## **9. Selection of Students**

Applications received for admissions are checked for completeness and a merit list based on the marks obtained in qualifying examination is prepared. The students are admitted as per the merit list. Guidelines issued by Central as well as State Govt. time to time for selection of students for admission in the University are followed for admitting eligible students in various Under Graduate Programmes. The students are also selected based on the performance in the entrance exam conducted by the university.

## **10. Registration**

The student after confirmation about admission in the under graduate programme shall register with the University by remitting the prescribed admission fees along with the application form, original certificates and other documents as required by the admission section.

## **11. Commencement of the Programme**

All Bachelor's Degree Programmes shall commence in the month of July every year except for first year. The first year classes shall commence in the month of August or as decided by the regulatory bodies and the university.

## **12. Working Days in a Semester**

Each semester normally consists of **90 working days inclusive of internal assessment tests**. End semester university theory and practical examinations are not included in 90 working days.

## **13. Transfer – Admission of Students**

The student seeking transfer from other universities and admission in this university is allowed subject to the availability of vacancy in the programme the student submitted request for admission and fulfilling the other eligibility requirements of the University. The eligibility criteria and credit transfer of completed course will be decided by the equivalence committee constituted by the university.

## **14. Break of Study**

**14.1 Total One Year break of study may** be allowed in the entire duration of the course for genuine medical grounds beyond the control of the student. **Only one semester break will be allowed at a time.** Classes attended by the students and declared not eligible for appearing in examination due to lack of minimum attendance percentage, misconduct, suspension etc will not be considered as Break of Study.

**14.2 During the break of study** a student:

- a. Cannot attend any regular classes.
- b. Will not be permitted to stay in the Hostel.
- c. Will not be permitted to participate in any of the Institution's activities inside the campus.
- d. Can register and reappear for the arrear courses in which he/she might have obtained an 'RA/AB' grade.

## **15. Readmission after Break in study or Discontinuation**

A student who avails the provision of break in study or discontinuation due to any miscellaneous reasons can seek for readmission in the odd/even semester. The Vice – Chancellor is vested with the power to permit the break and readmission in the programme for which the candidate must submit the request duly recommended by the faculty advisor (mentor), HoD and Dean with mapping of the courses already passed before discontinuation and to be studied in forthcoming semesters.

## **16. Curriculum and Syllabus**

The curriculum and syllabus related to each programme is designed complying with the Choice Based Credit System (CBCS) and Outcome Based Education (OBE) framework in the BoS and further approval by the Academic Council.

All programmes will have a curriculum comprising of Theory, Theory cum Practical and Practical courses and syllabus designed as per OBE framework for the achievement of COs as mentioned in the syllabus of the course as per Bloom's taxonomy levels and POs (Annexure I).

#### 16.1 Definition of Credit:

1 Hr. Lecture (L) per week	1 credit
1 Hr. Tutorial (T) per week	1 credit
2 Hours Practical (Lab) per week	1 credit

#### 16.2 Structure of Undergraduate Engineering Program – Regular Students

Sl. No.	Types of Courses	Suggested Breakup of Credits (Total)
1.	Humanities and Social Sciences including Management courses (include Professional English, Communication skills etc.)	12*
2.	Basic Science courses (include Mathematics, Physics, Chemistry, Biology etc.)	25*
3.	Engineering Science courses (include Engineering Practices, Engineering Graphics, Basics of Civil / Mechanical / Electrical / Electronics / Instrumentation, Computer Science Engineering etc.)	24*
4.	Professional Core courses (include the core courses relevant to the chosen specialization/branch.)	48*
5.	Professional Elective courses (include the elective courses relevant to the chosen specialization/ branch.)	18*
6.	Open electives courses (include the courses offered by a branch to other branches from the list specified in the respective curriculum of the B.E. / B. Tech. Programmes.)	18*
7.	Employability Enhancement Courses include Project Work, Internship, Seminar, Professional Practices, Case Study and Industrial/Practical Training etc.	15*
8.	Audit courses (include Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Knowledge Tradition etc.) Personality and Character Development Courses (include YOGA, NSS, NSO, NCC, Clubs etc.)	Non – Credit
Total		160*
*Minor variation is allowed for maximum 3 credits.		

#### 16.3 Structure of Undergraduate Engineering Program – Lateral Entry Students

Sl. No.	Types of Courses	Suggested Breakup of Credits (Total)
1.	Humanities and Social Sciences including Management courses (include Professional English, Communication skills etc.)	5*
2.	Basic Science courses (include Mathematics, Physics, Chemistry, Biology etc.)	3*
3.	Engineering Science courses (include Engineering Practices, Engineering Graphics, Basics of Civil / Mechanical / Electrical / Electronics / Instrumentation, Computer Science Engineering etc.)	3*
4.	Professional Core courses (include the core courses relevant to the chosen specialization/branch.)	48*
5.	Professional Elective courses (include the elective courses relevant to the chosen specialization/ branch.)	18*
6.	Open electives courses (include the courses offered by a branch to other branches from the list specified in the respective curriculum of the B.E. / B. Tech. Programmes.)	18*
7.	Employability Enhancement Courses include Project Work, Internship, Seminar, Professional Practices, Case Study and Industrial/Practical Training etc.	15*
8.	Audit courses (include Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Knowledge Tradition etc.) Personality and Character Development Courses (include YOGA, NSS, NSO, NCC, Clubs etc.)	Non – Credit
Total		110*
*Minor variation is allowed for maximum 3 credits.		

#### 16.4 Audit Courses and Courses for Personality and Character Development

**16.4.1** The student has to **mandatorily study minimum 02 non-credit audit courses** prescribed by the University like Environmental Sciences, Induction training, Indian Constitution, Essence of Indian Knowledge Tradition, Renewable Energy Sources etc. and it will be mentioned in the Grade Sheet. However, it will not be considered for calculation of CGPA.

**16.4.2** It is mandatory for all students to **undergo at least one of the personality and character development programmes** like YOGA, NSS, NSO, NCC, Clubs etc. The students also need to be aware of health and hygiene and first-aid which are offered as value added courses. Students are also encouraged to join clubs like Science club / Robotics club / Fine Arts club / Debate club etc.

**16.4.3** National Cadet Corps (NCC) will have parades and camps.

**16.4.4** National Service Scheme (NSS) will have social service activities in and around the University and even outside the campus in adopted villages.

**16.4.5** University Physical Education Department will organize Sports, Games and Physical exercises.

**16.4.6** Youth Red Cross (YRC) will have activities related to social services in and around University and even outside the campus in adopted villages.

**16.4.7** The audit courses shall be evaluated through continuous assessments only. Two assessments shall be conducted by the Department concerned.

**16.4.7.1** The total marks obtained in the assessments shall be reduced to 100 marks and the 03 member committee (HoD, Staff handling the course and a senior faculty member nominated by the HoI) constituted will recommend the names for issue of certificate and endorsement in marks statement to CoE through Dean.

**16.4.7.2 The grades awarded in audit courses and personality and character development courses will not be used for CGPA calculation.**

#### 16.5 Value Added Courses

**16.5.1** These courses are certificate courses over and above the curriculum and are offered to the students as skill enhancement and employability enhancement courses. These courses shall be evaluated through continuous assessments only. Two assessments shall be conducted by the Department concerned.

**16.5.2** The total marks obtained in the assessments shall be reduced to 100 marks and the 03 member committee (HoD, Staff handling the course and a senior faculty member nominated by the HoI) constituted will recommend the names for issue of certificate for successful completion to the students. HoI may recommend the names of the students along with the copy of certificates to the CoE for endorsement in marks statement.

**16.5.3 The grades awarded will not be used for CGPA calculation.**

#### 16.6 Internship, Seminar, Professional Practices, Mini Project, Case Study and Industrial/Practical Training

**16.6.1** The Internship, Seminar, Professional Practices, Mini Project, Case Study and Industrial/Practical Training shall be evaluated for 100 marks through internal assessment only.

**16.6.2** At the end of Internship, Seminar, Professional Practices, Mini Project, Case Study and Industrial/Practical Training, the student shall submit an attendance certificate from the organization where the student has undergone training and a brief report.

**16.6.3** Rules to be followed for awarding credits is as given below.

DURATION OF TRAINING / INTERNSHIP	CREDITS
2 Weeks*	1
4 Weeks	2
6 Weeks	3
*1 Week = 40 Internship Hours	

**16.6.4** The evaluation will be made based on this report and a viva-voce Examination conducted internally by a three member departmental committee constituted by the HoI consisting of the course coordinator and two experts from the Department and the credits will be awarded as given above.

**16.6.5** The certificates (issued by the organization) submitted by the students and credits awarded will be sent by the Head of the Institution to the CoE for endorsement in marks statement. The grades scored will be used for CGPA calculation.

### **16.7 Project Work**

**16.7.1** The Project Work carried out in industry/academic/research institutions may not be a continuation of Mini project which are generally offered in pre-final 7<sup>th</sup> semester. If the project work is an industry project, the Project Work shall be jointly supervised by a supervisor of the department and an expert as a joint supervisor from the industry. The student has to meet the supervisor periodically and to attend the review committee meetings for evaluating the progress.

**16.7.2** The Dean shall constitute a review committee for Project Work for each programme. The review committee consists of supervisor, an expert from the Department and a project coordinator from the Department. If the project coordinator/expert member happens to be the supervisor, then an alternate member shall be nominated. In the case of Industrial Project, the review committee shall have the supervisor, the coordinator from industry and the project coordinator from the Department.

### **17. MOOCs / SWAYAM / NPTEL / Blended Mode of Learning/Credit Transfer**

**17.1** The syllabus of the theory and practical courses should be designed by the BoS members with 40% of the total number of courses prescribed in curriculum which may be taught in online mode.

**17.2** The syllabus of each course also should be designed in such a way that 40% of the content may be taught online in case of any emergency arises where the university may decide to cancel all physical classes.

**17.3** Students are also allowed to **undergo a maximum of 02 courses (maximum 06 credits)** prescribed in curriculum which are offered as MOOCs through AICTE recognised NPTEL / SWAYAM platform.

**17.4** The credits earned in these courses may be transferred in semester marks statement on successful completion of the course and on recommendation by the equivalence committee to the CoE through HoI. The credits earned for the courses in curriculum completed through NPTEL/SWAYAM can also be used for overall CGPA calculation.

**17.5** Over and above the curriculum, the students if interested can take any number of courses offered through NPTEL / SWAYAM and credits earned on successful completion of these courses will also be transferred in semester marks statement but will not be used for overall CGPA calculation.

### **18. Flexibility to change the programme of study**

The student may opt for change of programme of study to another programme at any time. Equivalence committee may recommend with proper mapping of the courses passed and credits earned and courses to be studied and credits to be earned in forthcoming semesters for CGPA calculation.

### **19. Registration of courses in a semester/Dropping or Advancement of a course**

**19.1** Courses as mentioned in program structure shall be offered in odd/even semester in an academic year. All the courses under various headings like Professional Core, Professional Elective, Basic Science courses etc. will be available for the student and the student will have freedom to choose any course of his/her choice in any semester by fulfilling the condition of completing pre-requisite courses first if it is applicable for any other course. Mentors / Faculty Advisors will assist the student in selection of courses in a semester.

**19.2** **The course registration will be accepted for a batch of minimum 30 students. The course opted by a batch of less than 30 students will not be offered in the semester.**

**19.3** All eligible candidates need to compulsorily register for the courses at the beginning of each semester. **The students can register regular courses in a semester for minimum 14 credits and maximum of 28 credits excluding the credits of arrear courses.**

**19.4** The students can **register any number of arrear courses in a semester**. Generally, a maximum of 7 theory courses and 03 laboratory courses is suggested in a semester.

**19.5** However, if the student is left with credits **less than 14** to fulfil minimum 160 credit requirement for award of the degree in 6<sup>th</sup> or 7<sup>th</sup> Semester, the student will be allowed to register for courses less than 14 credits also. Registration will not include courses registered in NPTEL / SWAYAM.

**19.6** The students can also opt for dropping the course of reappearance if it is an elective and can choose a new elective course. In such case, the student has to attend the classes of the new course whenever the course is offered and has to satisfy the requirement of internal as well as external assessment and needs to re-register the course for university examination. The attendance and internal marks awarded in the course dropped will become null and void.

### **19.7 Advancement of Courses**

**19.7.1** The student, who has completed their final semester courses (except project work) in advance by taking extra credit courses, shall be permitted to carry out their final semester Project Work for six months in an industry/research organization.

**19.7.2** These students shall undergo the eighth semester courses other than the Project Work in the fifth, sixth and seventh semesters, provided they do not have current arrears and have a CGPA of 7.50 and above at the end of Semester IV.

**19.7.3** The HoD in consultation with the faculty handling the said courses shall forward the proposal recommended by the HoI to the CoE for approval at least 4 weeks before the commencement of the fifth semester of the programme for approval.

### **20. Assessment and Attendance Eligibility for appearing in University Examination**

**20.1** The student will be **assessed and evaluated for their learning twice in an academic year at the end of odd /even semester. Registration and appearing in end-semester final examination for all courses enrolled in that semester is mandatory. The student's learning will be assessed using formative and summative assessments.**

#### **20.2 Attendance - Eligibility for Appearing in End semester University Examination**

**20.2.1** A student needs to have **minimum 80 % course wise attendance to make him/her eligible for appearing in end semester university examination for that particular course.**

$$\text{Attendance \%} = [\text{No. of classes attended} / \text{No. of classes conducted}] \times 100$$

**20.2.2** Student having **attendance percentage less than 80% and up to 70%** due to **medical reasons, compassionate grounds and OD representing university in various co-curricular/extra-curricular activities including sports and games, NCC and NSS etc.** may submit an application to the Dean to **condone the shortage of attendance along with a genuine certificate for medical and compassionate grounds and participation certificate in co-curricular/extra-curricular activities.**

**20.2.3** The Dean will constitute a committee consisting of three members under his/her Chairmanship. The committee after due deliberations will accept or reject the application. In case the **application is accepted**, the student may be **allowed to appear in the end semester examination**. In case the **application is rejected**, the student **will not be allowed to appear in the end semester examination**. **Students who come under this category shall re- register the course in subsequent odd/even semester whenever the course is offered.**

**20.2.4** In case the student is having **attendance percentage less than 70% and up to 65%**, the Dean, if **convinced, may put up a case with justification to the Vice Chancellor of the University along with an application from the student to condone the shortage.** The Vice Chancellor will constitute a three member committee consisting of Dean Academics, COE and Dean Student Affairs. The Committee will deliberate and submit its recommendations to the Vice Chancellor through the Registrar.

**20.2.5** Importantly, those students who are likely to be short of required minimum attendance, are advised to undergo remedial classes (as planned by the Dean of the School) to make good the shortage of attendance, to appear for the end semester examinations.

**20.2.6** Those students with shortage of attendance in the course will not be allowed to appear in the university examination of that course. In such case, students who come under this category shall re-register and re-do the course whenever it is offered again in the odd/even semester for completion of the remaining attendance percentage.

**20.2.7** The mentors and Deans have to regularly counsel the students who have shortage of attendance. The consequences of the shortage of attendance are to be explained to the students. The counselling is to be done in writing, with information to parents/guardian. The rules and regulations pertaining to attendance shall be explained to the students during admission/induction.

**20.3 Internal Assessment (IA ) and Internal Marks - Formative**

A weightage of 50% of the total marks will be used for internal assessment of the students for theory and practical courses. The internal assessment marks will be calculated based on the following procedure.

**(a) Theory Courses**

Sl. No.	Components - Internal Marks Calculation	Marks
01	2 Continuous Assessment Test (CAT) of 10 Marks Each - Online / Offline	20
02	2 Course Related Assignments of 05 Marks Each - Online/Offline	10
03	1 Technical Seminar – Online / Offline	05
04	1 Model Examination - Online / Offline	15
<b>Total Marks</b>		<b>50</b>

**(b) Practical Courses**

The University Practical Examination shall be conducted in presence of an external examiner and the course handler as internal examiner for 50 marks. The external examiner shall be appointed by the CoE / Dean from the panel of examiners recommended by Chairman, Board of Studies in respective Branches.

Internal Marks Calculation (50% Weightage)			
Observation	Record	Model Practical	Viva Voce
10 Marks	15 Marks	15 Marks	10 Marks

**20.4 External Assessment (EA) – University Examination - Summative**

A weightage of 50% of the total marks will be used for external assessment of the students on theory and practical courses. **It is mandatory for the student to register the courses and appear in the exam.** The examination may be conducted Online/Offline depending on the prevailing situation.

**20.5 University Theory / Practical Examination**

An examination schedule approved by the Dean and the CoE for the University examinations shall be final. The Controller of Examinations, based on the panel of examiners sent by the Dean will nominate the external examiner for the practical examination and the course handling teacher shall be the internal examiner. Reappearance university examination for the arrear courses of previous odd/even semesters shall be conducted along with regular end semester university examinations.

**20.6 Postponement of University Examination**

Whenever the Government declares holidays on the dates of university examinations, the examination that falls on the particular date will be postponed to the date after the last examination as per the original examination schedule.

## 20.7 Examinations pattern

**Continuous Assessment Test** – Online / Offline Mode

**University Theory & Practical Examination** – Online / Offline Mode

Duration for Continuous Assessment and University Examinations

CAT1 and CAT2 : 1 hour and 30 minutes (50 marks each)

Model Examination : 3 hours (100 marks)

University Examination : 3 hours (100 marks)

**20.8** The student has to compulsorily submit “**No Dues Certificate**” from accounts section of the university before appearing in the final examinations.

## 20.9 Assessment for Project Work

Bachelor’s Degree projects can be carried out by individual students or by a group of students with a maximum of four students in a group. The assessment method for the project work consists of in-semester and University evaluations as given below:

Project Reviews (Internal) (50% Weightage)			University Evaluation (50% Weightage)	
Review 1	Review 2	Project Work Submission (20) and Viva - Voce (10)	Project Report and Presentation	Viva-Voce
5 Marks	15 Marks	30 Marks	40 marks	10 Marks

## 20.10 Question Paper Pattern for Theory Courses

The pattern of the question paper given below will be evenly followed for all the students irrespective of their batch from academic year 2023-24.

### (a) CAT (Continuous Assessment Test)

S.No.	Type of Questions	No. of Questions	Marks for each Question	Marks
1	Part A - Short Answers	10	2	20
2	Part B – Long Answers (Either - OR)	2	15	30
Total				50

### (b) Model and End Semester University Examinations

S.No.	Type of Questions	No. of Questions	Marks for each Question	Marks
1	Part A - Short Answers	10	2	20
2	Part B – Long Answers (Either - OR)	5	16	80
Total				100

## 21. Passing Requirements – Theory and Practical Courses

**21.1** A candidate securing not less than **50% of total marks [Sum of Internal Assessment (IA) and External Assessment (EA) put together]** prescribed for both theory and practical courses will be declared to have passed the Examination. **Internal Marks (50) + External Marks (50) = 100 Marks**

**21.2** There is **no minimum passing mark in IA. The student with zero IA marks is also eligible to appear in end semester university examinations.**

**21.3** The **minimum passing mark required in EA is 50% i.e. out of 50 marks, the student has to score minimum 25 marks.**

**21.4** The **minimum grade point to be secured for a pass in a course is 5.00.**

**21.5** If a student fails to secure a pass in a theory course / laboratory course (including electives), the student shall register and appear in the end semester examinations in subsequent semesters. In such case, **the internal assessment marks obtained by the student in the first appearance shall be retained and considered valid for subsequent 02 attempts only.**

**21.6** However, from the **third attempt onwards if a student fails to obtain pass marks, then the student shall be declared to have passed the examination if he/she secures a minimum of 50% marks prescribed for the University end semester examinations alone.**

**21.7** In case of the course is a **Professional Elective or an Open Elective course** and if the **student wants to drop the course** due to any reason such as low internal marks, facing difficulty in clearing the course etc. and wants to take **new course in place of the course he studied earlier**, the student is allowed to do so. In such case, the previous registration of the course will be cancelled along with IA marks and attendance.

**21.8** For the new course registered, the student has to attend the regular classes whenever it is offered and he/she has to fulfil all requirements of attendance percentage and awarding internal assessment marks.

**21.9** If a student is absent during the viva - voce examination of project work, he/she would be considered as fail.

**21.10** The minimum passing requirement for the courses which are assessed only through purely internal assessments e.g. audit courses, personality and character development courses, value added courses etc. is 50%. The evaluation will be done by the course instructor through internal tests and marks will be awarded out of 100. The student will be awarded with Satisfactory Grade on successful completion of the course.

**21.11** A student can apply for revaluation of the end semester examinations answer script only in a theory course and can also apply for obtaining photocopy of the answer script as per the guidelines of the CoE on payment of prescribed fee along with application to the CoE through the Dean.

**21.12** The CoE will arrange for the revaluation and the results will be intimated to the student concerned through the Dean. Revaluation is not permitted for laboratory course and for the courses prescribed for internal evaluation only.

## **22. Class In-charge**

There shall be a Class In-charge for each class. The Class In-charge will be one among the course-instructors of the class. He / She will be appointed by the HoD of the department concerned. The class advisor is also the Convener of the class committee. The responsibilities of the Class In-charge shall be:

- a) To act as the channel of communication between the HoD and the students of the respective class.
- b) To collect and maintain various statistical details of students.
- c) To help the chairperson of the class committee in planning and conduct of the class committee meetings.
- d) To monitor the academic performance of the students including attendance and to inform the class committee.
- e) To encourage and motivate students for co-curricular and extra-curricular activities.

## **23. Faculty Advisor/Mentor**

A faculty will be allotted with 15 to 20 students in a class for mentoring. The mentor will be keeping all the personal details of the students and will counsel students periodically for improvement of their academic performance. The mentors will be in touch with parents of students allotted to him/her and regularly update them regarding attendance



percentage, academic performance etc. of their wards. The mentors will keep complete record of counselling of students and will report periodically to HoD/Dean.

#### **24. Class Committee**

**24.1** Every class shall have a class committee consisting of teachers of the class concerned, student representatives and a chairperson, who is not teaching the class. The responsibilities of the class committee include:

- a) Solving problems experienced by students in the class room and in the laboratories.
- b) Clarifying the regulations of the degree programme and the details of rules therein.
- c) Informing the student representatives, the academic schedule including the dates of assessments and the syllabus coverage for each assessment.
- d) Informing the student representatives the details of Regulations regarding weightage used for each assessment. In the case of practical courses (laboratory / drawing / project work / seminar etc.) the breakup of marks for each experiment / exercise / module of work, should be clearly discussed in the class committee meeting and informed to the students.
- e) Analyzing the performance of the students of the class after each test and finding the ways and means of solving problems, if any.
- f) Identifying the slow-learners, if any, and requesting the teachers concerned to provide some additional help or guidance or coaching to such students.

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

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

**24.4** At least 4 student representatives (usually 2 boys and 2 girls) shall be included in the class committee.

**24.5** The chairperson of the class committee may invite the class advisor and the Head of the Department to the class committee meeting.

**24.6** The Dean may participate in any class committee meeting of the institution.

**24.7** The chairperson is required to prepare the minutes of every meeting, submit the same to the HoI within two days of the meeting and arrange to circulate it among the students and teachers concerned. If there are some points in the minutes requiring action by the university, the same shall be brought to the notice of the university by the Dean.

**24.8** The first meeting of the class committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of the Regulations. Two or three subsequent meetings may be held in a semester at suitable intervals.

**24.9** The Class Committee Chairperson shall display the cumulative attendance particulars of each student on the Notice Board at the end of every such meeting to enable the students to know their attendance details. During these meetings the student members representing the entire class, shall meaningfully interact and express the opinions and suggestions of the other students of the class in order to improve the effectiveness of the teaching-learning process.

#### **25. Course Committee For Common Courses**

Each common theory or laboratory course offered to more than one discipline or group, shall have a "Course Committee" comprising all the teachers teaching the common course with one of them nominated as the course coordinator. The nomination of the course coordinator shall be made by the HoD / HoI depending upon whether all the teachers teaching the common course belong to a single department or to several departments. The 'Course Committee' shall meet regularly in order to arrive at a common syllabus coverage and scheme of evaluation for the test and shall ensure a uniform evaluation of the tests. The Course Committee should also prepare a common question paper for the internal assessment test(s).

**26. Award of Degree - Eligibility**

The student will become eligible for the award of the Bachelor's Degree if he/she has

- Registered and successfully completed the courses and has earned minimum 160 credits applicable for regular admission students and 110 for lateral entry students in respective discipline.
- Maintained a minimum CGPA of 5.00 out of 10.00 at the end of final year.
- No disciplinary action is pending against him/her.

**27. Bachelor's Degree Programme with Specialization**

If the student earns 15 credits completely in specialization electives within the minimum requirement of credits for the award of the Bachelor's Degree, he / she shall be awarded with Bachelor's Degree with Specialization. For example, Bachelor's Degree in Computer Science and Engineering with Specialization in 'Artificial Intelligence and Data Science'.

**28. Bachelor's Degree Programme with Honours**

If the student earns 20 credits in specified electives over and above the minimum requirements of credits for the award of the Bachelor's Degree, he / she shall be awarded with Bachelor's Degree in parent discipline with 'Honours'. For example, Bachelor's Degree in Electronics and Communication Engineering (Honours). These credits can also be earned through SWAYAM/NPTEL.

**29. Bachelor's Degree Programme with Minor Degree**

If the student earns 20 credits over and above the minimum requirements of credits for the award of Bachelor's Degree, he / she shall be awarded Bachelor's Degree in parent discipline with 'Minor' in other discipline or in emerging areas. For example, Bachelor's Degree in Mechanical Engineering with Minor Degree in Electrical and Electronics Engineering. These credits can also be earned through SWAYAM/NPTEL.

**30. Performance Grades**

The students' performance in the examinations related to the courses in a programme is calculated based on numerical value of Cumulative Grade Point Average (CGPA). CGPA calculation is based on Marks, Credits, Grade and Grade points assigned.

**30.1 Semester Grade Point Average (SGPA)**

Semester Grade Point Average (SGPA) is calculated on completion and declaration of result of a semester.

$SGPA = \frac{\sum(C_i * G_i)}{\sum C_i}$  where  $C_i$  is the credit for a course in that semester and  $G_i$  is the Grade Point earned by the student for that course. The SGPA is rounded off to two decimal numbers and calculated on all courses appeared including courses in which 'RA' grade is obtained.

**30.2 Cumulative Grade Point Average (CGPA)**

The overall performance of a student at any stage of the Degree Programme is evaluated using Cumulative Grade Point Average (CGPA) and is calculated on the courses which are successfully completed.

$$CGPA = \sum_j \left\{ \frac{\sum_i (C_{ij} * G_{ij})}{\sum_i C_{ij}} \right\}$$

**30.3 Range of Marks for awarding of Grades**

The mark scored by the student in theory and practical courses out of 100 (IA+EA) is mapped to the grades as given in the following table.

Letter Grade	Grade Point	Mark Range
O (Outstanding)	10	91 – 100
A+ (Excellent)	9	81 – 90
A (Very Good)	8	76 – 80

Letter Grade	Grade Point	Mark Range
B+ (Good)	7	71 – 75
B (Average)	6	61 – 70
C (Satisfactory)	5	50 – 60
AB (Absent)	0	Absent in Examination
RA	0	Reappearance (<50)
SA	0	Shortage of Attendance
W	0	Withdrawal

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

**30.3.2** **‘AB’** denotes absent for the courses the student has registered for the examination but did not appear. ‘AB’ will appear in the semester result sheet.

**30.3.3** **‘RA’** denotes re-appearance for the course the student has failed in the examination. ‘RA’ will appear in the semester result sheet.

**30.3.4** **‘SA’** denotes shortage of attendance and hence prevented from writing the end semester examinations. ‘SA’ will not appear in the semester result sheet.

**30.3.5** **‘W’** denotes withdrawal of course voluntarily by the student. The student wants to drop the course he/she could not pass in previous examination and instead will opt for a new course. ‘W’ will not appear in the semester result sheet.

**30.3.6** **Audit courses, value added courses, non-credit courses** etc. will be awarded with **Satisfactory (S) or Not Satisfactory (NS) Grades** depending on the marks scored in assessment exams. **Marks scored 50% or more will be awarded with ‘S’ grade otherwise it will be ‘NS’ grade.**

### **31. Successful Candidates for Award of Degree - Classification**

#### **31.1 First class with Distinction**

**31.1.1** A student who qualifies for the award of degree and passed the examinations in all registered courses in his / her first appearance **within four years for students admitted in first year or three years for lateral entry students** and securing a **CGPA of not less than 8.50 shall be declared to have passed in First class with distinction.**

**31.1.2** A student who qualifies for the award of degree and passed the examination in all registered courses in his / her first appearance **within five years for students admitted in first year and four Years for lateral entry students** including the authorized Break of Study of one year and **securing a CGPA of not less than 8.50** shall be declared to have passed in First class with distinction.

#### **31.2 First Class**

**31.2.1** A student who qualifies for the award of degree and passed the examinations in all registered courses **within four years** for students admitted in first year or three years for lateral entry students and **securing a CGPA of not less than 6.50** shall be declared to have passed in First class.

**31.2.2** A student who qualifies for the award of degree and passed the examination in all registered courses **within five years for students admitted in first year and four Years for lateral entry students** including the authorized Break of Study of one year and **securing a CGPA of not less than 6.50** shall be declared to have passed in First class.

#### **31.3 Second Class**

All other students not covered above and who qualifies for the award of B.Tech. Degree and passed the examination in all the registered courses shall be declared to have passed in Second Class.

**32. Approval of Final Results for Certificates and Transcripts**

The Vice- Chancellor shall approve the final results. The Registrar shall issue Provisional Certificates, Transcripts, Transfer and Migration Certificates to the Candidates.

**32.1 Withholding or cancelling the degree awarded**

The Vice Chancellor is empowered to withhold or cancel the degree awarded if any malpractice by the student is detected at a later stage regarding the registration, CGPA and other requirements for successful completion of the respective engineering degree programme.

**32.2 Amending or cancelling the Result**

If it is found at a later stage that the result of a candidate has been vitiated by malpractice, fraud or other improper conduct and that he/she has been a party to malpractice connivance or improper conduct of another student, the Vice Chancellor shall have the powers at any time to amend the results of such a candidate and to make such declaration as the Vice Chancellor may deem necessary on that behalf including return of prize, scholarship money and debarring the candidate from the University for such periods as may be specified and to cancel the results of the candidate. **The Vice Chancellor's decision will be final in this regard.**

**33. RANKING**

**33.1** Students obtaining top 3 positions in CGPA ranking in a Programme at the university level will be considered as a rank holder.

**33.2** **The students should have passed all the prescribed courses in the first appearance and should have obtained a CGPA of 6.50 and above.**

**33.3** The student should also have a clean record of discipline during the period of study.

**33.4** Special certificates will be given to rank holders.

**34. MODIFICATIONS OF REGULATIONS**

The Vice Chancellor of the university is vested with the power to modify or change any rule depending on situational requirements in consultation with appropriate authority/committee and on recommendation from Dean.

**PROGRAMME OUTCOMES (POs)**

On completion of a Programme of Engineering, Graduates will be able to:

Sl. No.	Outcome	Description
PO 1	<b>Engineering knowledge</b>	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO 2	<b>Problem analysis</b>	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
PO 3	<b>Design / Development of solutions</b>	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO 4	<b>Conduct investigations of complex problems</b>	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
PO 5	<b>Modern tool usage</b>	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
PO 6	<b>The engineer and society</b>	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
PO 7	<b>Environment and sustainability</b>	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO 8	<b>Ethics</b>	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
PO 9	<b>Individual and team work</b>	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO 10	<b>Communication</b>	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
PO 11	<b>Project management and finance</b>	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO 12	<b>Life-long learning</b>	Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.