VIGNAN'S

FOUNDATION FOR SCIENCE, TECHNOLOGY & RESEARCH

(Deemed to be University) - Estd. u/s 3 of UGC Act 1956

R26 Academic Regulations

B.Tech. Agriculture Engineering

w.e.f. batch 2026-30

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In Compliance with NEP 2020

PREFACE – R26

The future belongs to those who can learn continuously, innovate confidently, and adapt to rapidly evolving technologies. As higher education responds to the transformative impact of ***Artificial Intelligence (AI)****, digitalization, and global challenges, universities must equip students with not only knowledge but also the skills and mindset required to excel in an increasingly dynamic world.*

With this vision, VFSTR introduces the ***R26 Regulations****, a progressive curriculum framework aligned with the objectives of the* ***National Education Policy (NEP) 2020*** *and the principles of* ***Outcome-Based Education (OBE)****. The R26 curriculum has been designed to ensure that learning is meaningful, measurable, application-oriented, and focused on the attainment of clearly defined graduate outcomes.*

A distinctive feature of R26 is the ***strategic integration of Artificial Intelligence across all academic programs****, enabling students from diverse disciplines to understand and apply AI tools and methodologies relevant to their domains. This initiative aims to create* ***future-ready graduates*** *who can effectively leverage emerging technologies, solve complex real-world problems, and contribute to innovation-driven growth.*

The curriculum places strong emphasis on ***project-based, research-centric, and experiential learning****, encouraging students to move beyond passive acquisition of knowledge toward inquiry, creativity, design thinking, and problem-solving. Through interdisciplinary projects, industry engagement, research activities, internships, and innovation-driven learning experiences, students will develop the competencies needed for higher studies, entrepreneurship, and professional success.*

R26 also promotes flexibility, multidisciplinary learning, sustainability, ethical responsibility, and the values embedded in ***Indian Knowledge Systems (IKS)****. By fostering critical thinking, collaboration, communication, and lifelong learning, the curriculum seeks to nurture graduates who are not only technically competent but also socially responsible and globally competitive.*

I am confident that the R26 Regulations will further strengthen VFSTR's commitment to academic excellence and provide a transformative educational experience that prepares our students to lead, innovate, and excel in the decades ahead.

I extend my best wishes to all students, faculty members, alumni, and stakeholders for the successful implementation of the R26 curriculum and for shaping a future defined by knowledge, innovation, and impact.

Prof. K. V. Krishna Kishore
In-Charge Vice-Chancellor
VFSTR

REGULATIONS - TABLE OF CONTENTS

	EXECUTIVE ABSTRACT		
			Page Numbers
1	**INTRODUCTION**		8
	1.1	Definition	8
	1.2	Academic Administration	10
	1.3	Program Duration	10
	1.4	Courses and Credits	10
	1.4.1	Content Delivery of a Course	11
	1.5	B.Tech. Agricultural Engineering Degree	11
	1.5.1	B.Tech. with Honours Specialization: XX	12
	1.5.2	B.Tech. with Minor Specialization in XX	12
	1.5.3	B.Tech. with Add-on Diploma	12
	1.5.4	B.Tech. with Add-on Certification	12
	1.6	Composition of an Academic Year	12
	1.7	Semester-wise Provisions	13
2	**CURRICULUM**		14
	2.1	Distribution of credits	14
	2.2	Organization of Course Contents	15
	2.3	Prerequisite Knowledge	15
3	**NATIONAL CREDIT FRAMEWORK / CHOICE BASED CREDIT SYSTEM**		15
	3.1	Basic Sciences and Humanities	16
	3.2	Basic Engineering	16
	3.3	Professional Core	16

	3.4	Electives	16
	3.4.1	Department Electives	16
	3.4.2	Open Electives	17
	3.5	Project	17
	3.6	In Plant Training/Internship	18
	3.7	Binary Graded Courses	19
	3.7.1	Deeksharambh (Orientation Session)	19
	3.7.2	Physical Fitness and Social Activities	19
	3.7.3	Life Skills	19
4	**ATTENDANCE**		20
5	**ASSESSMENT**		20
	5.1	Marks Distribution	21
	5.2	Qualifying Criteria	21
	5.3	L-based courses integrated with P/T (L+P/ L+T/ L+T+P)	22
	5.3.1	Formative Assessment	22
	5.3.2	Summative Assessment	24
	5.4	P-based Courses (P/ T+P/ T)	25
	5.4.1	Formative Assessment	25
	5.4.2	Summative Assessment	27
	5.5	Assessment and Grading of MOOCs-based Elective	28
	5.6	Minor Project/Inter-departmental Project / Field Projects	28
	5.6.1	Formative Assessment	28
	5.6.2	Summative Assessment	29
	5.7	Project	29

	5.7.1	Formative Assessment	30
	5.7.2	Summative Assessment	31
	5.8	Semester-long Internship	31
	5.8.1	Formative Assessment	31
	5.8.2	Summative Assessment	33
	5.9	1-Credit Binary Graded Courses	33
	5.9.1	Formative Assessment	33
	5.10	Orientation Program (2-Credit Binary Graded Course), I^2C, On-site Training, Floating Credit Courses	34
	5.10.1	Formative Assessment	34
	5.11	1-Credit and Other Special Category Courses	35
	5.12	Creative Work-in-Lieu of a Courses	35
6	**SEMESTER-END ASSESSMENT ACTIVITIES**		37
7	**COMPUTATION OF GRADING**		37
8	**SUPPLEMENTARY EXAMINATIONS**		38
9	**GRADE POINT AVERAGE**		39
	9.1	SGPA	39
	9.2	CGPA	39
	9.3	Grade Point Percentage Equivalence	39
10	**AWARD OF CLASS**		40
11	**AWARD OF DEGREE**		40
12	**LATERAL ENTRY AND LATERAL EXIT OPTIONS**		41
	12.1	Lateral Entry into II year of B.Tech.	41
	12.2	Inter- Institutional Credit Transfer	41
	12.3	Honourable exit with B.Sc. or Engineering Diploma	41

	12.4	Volunteer 'Drop' with Sabbatical Semester option	42
	12.5	Volunteer 'Drop' with Semester Drop option	42
13	**CHANGE OF BRANCH DISCIPLINE**		43
14	**MINIMUM REQUIREMENTS FOR PROMOTION TO THE NEXT SEMESTER**		43
15	**PROVISION FOR PURSUING TWO ACADEMIC PROGRAMS SIMULTANEOUSLY**		44
16	**INTERPRETATION OF RULES**		44
	ANNEXURES		
	Annexure – 1: Supplementary regulation for pursuing B.Tech. Under accelerated learning program		45
	Annexure -2: supplement regulation for pursuing B.Tech. With research honours (specialization: xx)		47
	Annexure -3: Supplementary regulation for year-long project or industry internship		49

Academic Regulations, Curriculum and Course Contents

EXECUTIVE ABSTRACT

The Academic Regulations - R26, Curriculum, and Course Structure of VFSTR Deemed-to-be University are designed in alignment with NEP-2020, emphasizing continuous learning, continuous assessment, and competency-based education. These regulations build upon the evolving academic framework of the University, responding to the changing landscape of higher education, emerging professional demands, and the diverse learning needs of students, while further strengthening the integration of NEP-2020 principles into curriculum, pedagogy, assessment, and academic progression. Our curriculum follows Indian Council of Agricultural Research (ICAR) VI Dean Committee Guidelines. In recognition of the transformative role of Artificial Intelligence across contemporary engineering and professional domains, the framework also seeks to develop students' AI awareness and capabilities as an integral part of their engineering education, enabling them to adapt to emerging technologies and apply them meaningfully across disciplines.

The course structure incorporates a two-module system, where Module-1 focuses on strengthening foundational knowledge and conceptual clarity, while Module-2 fosters higher-order thinking, problem-solving, and innovation. The curriculum adopts the **T-shaped learning philosophy**, balancing breadth (horizontal line) and depth (vertical line) in knowledge acquisition. The vertical line represents deep expertise in core engineering domains, while the horizontal line encourages cross-disciplinary learning and adaptability, equipping students with both rich foundations and diverse competencies for research, industry, and entrepreneurship.

Furthermore, the program ensures an integrated and rigorous learning experience across science, humanities, management, basic engineering, and specialized engineering domains. Rather than offering superficial exposure, the curriculum is designed to provide in-depth engagement in these areas. It offers students the flexibility to choose electives not randomly from other fields but from domains related to and enhancing the scope of their cognitive field, ensuring meaningful multidisciplinary learning. This fosters a truly multidisciplinary and holistic education that bridges theoretical knowledge with practical application. In alignment with this vision, relevant concepts from the **Indian Knowledge System (IKS)** have been woven into a few courses, enriching modern scientific approaches with India's rich intellectual traditions. Additionally, all courses in the curriculum are mapped with relevant **Sustainable Development Goals (SDGs)**, reaffirming VFSTR's commitment to fulfilling the SDGs through education.

To provide greater academic flexibility, the provision of **'Creative Work-in-Lieu of a Course'** continues to provide an avenue for students to pursue creativity-driven exploration in place of a conventional elective, leading to research-based outcomes such as peer-reviewed publications, patents, or innovative projects. This provision encourages students to engage with

impactful research and real-world problem-solving, fostering a culture of innovation, creativity, and intellectual contribution. Additionally, experiential learning has been infused throughout the curriculum, ensuring that students gain hands-on experience through industry collaborations, prototype development, applied research, and project-based activities. These learning experiences provide opportunities for students to connect theoretical knowledge with practical applications and address real-world challenges.

The assessment framework is designed as an integral component of the learning process, with students being assessed progressively across all levels of the revised Bloom's Taxonomy. While foundational levels of learning are assessed to ensure conceptual understanding, greater weightage is accorded to application and analysis, promoting deeper learning, problem-solving, and the meaningful use of knowledge. Project-based learning and other higher-order learning experiences further provide opportunities for students to demonstrate capabilities at the level of creation, thereby making assessment a comprehensive measure of learning progression and competency development.

The four-year B.Tech. Agricultural Engineering program follows a flexible and student-centric approach, incorporating **lateral entry and honorable exit options**. Students completing the required credits after three years may earn an Engineering Diploma or a three-year Bachelor's Degree, facilitate early career opportunities while retain the option to return and upgrade their qualifications. However, the primary focus remains on ensuring students acquire a full B.Tech. degree, enriched by add-on certifications such as Honours, Minors, and Add-on Diplomas. Additionally, for students who wish to progress at a slower pace, a spillover period of up to three additional years is available for degree completion, ensuring academic flexibility without compromising learning outcomes. By integrating **multidisciplinary learning**, **competency development**, **experiential and skill-based education, academic flexibility**, and **holistic assessment**, VFSTR reaffirms its commitment to developing well-rounded, adaptable, innovative, and future-ready professionals in accordance with the transformative vision of NEP-2020.

SALIENT FEATURES OF R26 REGULATIONS

- Multidisciplinary learning
- Continuous learning
- Continuous assessment
- AI-Integrated Future-Ready Education
- Creative Work-in-Lieu of a Course

VALUE ADDITION

- Honours/ Research Honours / Minor / Add-on Diploma / Add-on Certification
- Lateral entry and honorable exit options
- Sabbatical Semester Drop option to pursue innovation, incubation, entrepreneurial and advanced exploratory activities and subsequent re-entry
- Credit earning through credit transfer

1 INTRODUCTION

This document contains the academic regulations, scheme of assessments, curriculum, detailed syllabi, course contents with text / reference books recommended, course outcomes, skills expected to be acquired and the projects / assignments that are to be performed for each course for the conduct of 4-year B.Tech. Agricultural Engineering degree programmes. The B.Tech. Agricultural Engineering degree programme under school of Agriculture and Food Technology in VFSTR as listed below. The 3-character codes indicated in parentheses are their branch discipline codes.

I. School of Agriculture and Food Technology

- Agricultural Engineering - (AGE)

1.1 Definition

For the purpose of R26 regulation, definitions as follows shall apply:

- "**Degree**" shall refer to the B.Tech. Degree Program.
- "**Course**" shall refer to such Course(s) for which a student shall earn Credits after due assessment as per the laid provisions. Project is also treated as a Course.
- "**Academic activities**" shall refer to the activities like Lecture-L (Physical Lecture Session), Transactions (Tutorial)-T (Participatory discussion / Self-Study / Desk Work / Quiz / Seminar Presentation, etc. activities that make the student absorb & assimilate, the delivered contents effectively) and Practical / Practice Sessions-P (includes Hands on Experience / Lab experiments / Field Studies / Case Studies etc. activities that enable the student to acquire the requisite skill).
- "**Credit**" refers to a unit of measurement assigned to courses based on the weekly instructional hours. Typically, one credit corresponds to one hour of lecture (L) or two hours of transaction (T) / practices (P) sessions per week.
- "**Continuous Assessment**" shall refer to the assessment of the student spread over the entire semester on the various constituent components of the prescribed course.
- "**Semester**" shall refer to a period covering the two assessment periods viz Formative and Summative Assessment period. A semester would generally be spread over twenty weeks.
- "**Course Drop**" shall refer to a student having to undertake a 'Repeat (R)' of the Course(s) not being able to complete the Credit requirements of the Course(s), under the conditions stipulated in the regulation.
- "**Supplementary Examinations**" shall refer to the examination(s) conducted to allow the student to appear in the un-cleared / Incomplete (I) Semester - End summative assessment component.
- "**Blank Semester**" shall refer to a Semester in which a student either does not register for any course at the beginning of the Semester OR chooses to DROP all courses OR is so compelled to DROP all the courses, as the case may be.

- "**Semester Drop**" shall refer to availing a blank semester. However, if drop is availed to pursue a creative extension activity, then it is defined as **semester sabbatical**.
- **"Spill Over Semester"** shall refer to the additional semester(s) beyond the completion of prescribed normal semesters.
- **"AAA Section"** shall refer to the Academics, Assessment and Award Section of the Institute.
- **"Attendance"** refers to the physical personal presence in an academic activity session.
- **"Summer Semester"** refers to a Semester that is scheduled to be held during the intervening period of Even and Odd Semester (*i.e*. Summer Vacation period).
- **"Themes"** refer to the courses offered in a particular stream other than offered by the regular departments, for example NCC, Entrepreneurship, Fitness and Living, *etc*.
- **"School"** refers to a division of institute dealing with two or more specific areas of discipline / study comprising of the departments related with exclusive emphasis on trans-disciplinary research.
- **"Department"** refers to a division of institute dealing with a specific area of discipline / study.
- **"HoD"** refers to the Head of the respective Department, where the student is enrolled for his / her Branch of Study.
- **"Center"** refers to a structured unit within the school / department established with the purpose to carry out advanced research.
- **"Grade Point"** refers to the quantification of the performance of a candidate in a particular course as defined herein.
- **"SGPA"** refers to the Semester Grade Point Average and is calculated as detailed in the regulations subsequently.
- **"CGPA"** refers to the Cumulative Grade Point Average and is calculated as detailed in the regulations subsequently.
- **"Division"** refers to the Division awarded to the student as per the mechanism detailed in the regulations subsequently.
- **"Internship"** refers to onsite Practical Training offered by reputed companies / Institutions, in India or abroad. To be undertaken with (or seeking) prior approval of the respective HoD.
- **"Project"** refers to a course executed by a candidate on a specific research problem / product or process development at VFSTR / any organization of repute. To be undertaken with (or seeking) prior approval of the respective HoD.
- **"Credit equivalence and credit transfer committee"** refers to the committee designated to look into for credit equivalence and credit transfer.
- **"Honourable Exit Option"** refers to the Exit Options available to students, when they are unable to complete the prescribed four-year B.Tech. Degree program in seven successive years or would like to voluntarily exit.

1.2 Academic Administration

The academic programmes of VFSTR are governed by the rules and regulations approved by the Academic Council and subsequently Executive Council from time to time. The various academic activities are conducted following a fixed time schedule duly approved by the Academic Council in line with the AICTE / UGC regulations. The academic activities of VFSTR are followed meticulously as specified in the academic calendar as approved by the Academic Council. This academic calendar is shared with all the stakeholders well before the beginning of the respective academic year. The curriculum and the course contents of all the programmes are discussed by the respective Board of Studies (BoS), analyzed and recommended for implementation. The Academic Council, being the highest statutory body for academic affairs, chaired by the Vice-Chancellor, meets four times a year and discusses, suggests and approves all the important academic matters related to curriculum and course contents in particular including the recommendations of BoS. The intended revision in regulations (R26) was accepted and recommended by the Academic Council in its 45th meeting on 11-04-2026.

1.3 Program Duration

For the branch disciplines listed in section (1), the regular courses including theory and practical are offered over a period of four years in eight semesters. The normal duration to complete the B.Tech. program is four years. However, in alignment with NEP-2020 and UGC provisions, advanced learners can complete the B.Tech. program in 3.5 years through the Accelerated Degree Program by fulfilling the prescribed credit and eligibility requirements. Additionally, students can benefit from the Extended Degree Program, availing a spill over period for 3 years, allowing a maximum duration of seven years to complete the B.Tech. programme at a slower pace if he / she desires. This flexibility caters to diverse learner needs and career aspirations, supporting both accelerated and extended degree pathways. Candidates failing to complete the requirements within this period will be considered for an honourable exit, as applicable. Honourable exit can also be exercised by a candidate voluntarily.

1.4 Courses and Credits

The term course is used in a broader sense to refer to so called papers such as ‘theory subject’, ‘laboratory’, ‘Minor / inter-departmental / field project’, ‘major-project’ etc. A course can be of theoretical and/ or of practical nature, and certain number of credits are allotted to it depending on the number of hours of instruction per semester. For a course offered in a semester, one hour of lecture (L) instructions carried out in a week is considered equivalent to one credit, whereas two hours of practical (P) sessions done in a week are considered equivalent to one credit respectively. Depending on the course two hours of tutorial (T) sessions may be considered equivalent to one credit. A student earns these credits when he/she successfully completes the course. Credits can also be obtained by successful completion of other recognized co-curricular and extra-curricular activities such as NCC, NSS, Yoga, Dance, Music, Painting, etc. The details of credits of such activities will be provided by the respective

course coordinators and assessment of student performance in the activities will be carried out objectively by the constituted committees appointed by the Dean AAA. The criteria of assessment for these activities will include aspects like regular attendance in the programme and satisfactory completion of it through assessments conducted at university level or by participation / performance at university level events, state level or national level participation etc. Add-on credits earned in a specified manner will lead to earning B.Tech., B.Tech. with Honours, B.Tech. with Research Honours, B.Tech. with Minor, B.Tech. with Add-on Diploma and B.Tech. with Add-on Certification.

1.4.1 Content Delivery of a Course

Content delivery of a Course in the B.Tech. Degree Program shall be through, either or all, of the following Methods:

i. **Lecture** - refers to Lecture Session(s) through classroom contact session wherein students will learn by listening. Denoted by "L".
ii. **Tutorial** - refers to transaction(s) consisting of Participatory discussion / Self-study / Desk work / Brief presentations by students along with such other novel methods that enable a student to efficiently & effectively absorb and assimilate the contents delivered in the lecture sessions. Denoted by "T".
iii. **Practice** - refers to Practice / Practical sessions and it consists of Hands-on-Experience / Laboratory Experiments / Field projects / Case Studies / Minor / Major Project, that equip the students to acquire the much-required skill component. Denoted by "P".

1.5 B.Tech. Agricultural Engineering Degree

All students formally and conventionally enroll for B.Tech. degree programme. They have to earn **170+6+8** credits for the award of degree as specified in the Curriculum, wherein **170** credits shall be referred as 'Graduating credits' and assigned towards courses such as Professional Core, Electives, Basic Engineering, Humanities and Management, Basic Sciences and Projects. Additional **6** credits are referred as 'MOOC's/Online Courses and assigned towards courses such as Online Professional Core. **8** credits are referred as 'Compulsory Binary Grade Credits' and shall be awarded for various binary grade courses specified in the curriculum. However, additionally he/she can opt to earn up to **16** more credits as Add-on credits, to earn the academic benefits as specified below.

1.5.1 B.Tech. with Honours Specialization: XX

A candidate may earn additional 16 credits, cumulatively totalling to **170+6+8+16** credits in the respective discipline spread over fifth to eight semesters to become eligible for the award of B.Tech. with Honours in YY Engineering (Specialization: XX)

If the add-on credits are designed to take-up a research activity and to complete a research thesis under the scope of **170+6+8+16** credits, then he/she becomes eligible to receive the award of B.Tech. with Research Honours in YY Engineering (Specialization: XX). However, admission stipulations are applicable for a candidate to pursue B.Tech. with Research Honours, as prescribed by the Institute from time to time.

1.5.2 B.Tech. with Minor Specialization in XX

A candidate may earn additional 16 credits, cumulatively totalling to **170+6+8+16** credits in anyone of the other disciplines spread over fifth to eight semesters to become eligible for the award of B.Tech. in YY Engineering with Minor Specialization in XX.

YY refers to name of the Branch discipline (e.g., CSE / ECE / BT); XX refers to a particular specialization within a branch/discipline.

1.5.3 B.Tech. with Add-on Diploma

If a candidate earns add-on 16 credits from assorted disciplines/ themes/ centers, then he/ she will be eligible for the award of B.Tech. with Add-on Diploma.

1.5.4 B.Tech. with Add-on Certification

If a candidate in accordance with the sections of 1.5.1, 1.5.2, and 1.5.3 earn additional credits, but will not satisfy the completion of 16 credits, then he / she will be eligible to receive B.Tech. with Add-on Certification. However, such a candidate may also avail a spill over semester to complete 16 credits.

Note: The consolidated transcript will contain the credits and grade details of all courses amounting to 170+6+8 + up to 16 credits.

1.6 Composition of An Academic Year

An academic year is composed of an **odd semester** (20 – 22 weeks), an **Even semester** (20 – 22 weeks) and a **summer semester** (6 – 8 weeks). The regular semester that begins in July / August is known as odd / first semester and the one that begins in December / January is known as even / second semester (Figure 1). The instructional days for a regular semester shall be a minimum of 90 working days exclusive of days earmarked for summative assessment.

YEAR OF 12 MONTHS											
1	**2**	**3**	**4**	**5**	6	7	8	9	**10**	**11**	**12**
July/ Aug.	Aug./ Sept.	Sept./ Oct.	Oct./ Nov.	Nov./ Dec.	Dec./ Jan.	Jan./ Feb.	Feb./ Mar.	Mar./ Apr.	Apr./ May	May/ June	June/ July
ODD SEM/ FIRST SEM					**EVEN SEM/ SECOND SEM**					**SUMMER SEM**	

Figure 1: Distribution of semesters during an Academic Year.

1.6.1 Before the commencement of the semester, a candidate has to pay the stipulated tuition fee and submit an application detailing the courses he / she intended to register, valid for that respective Odd / Even semester. The maximum number of credits per semester will be 25 credits inclusive add-on credits. The intended semester wise coverage will be as presented in the curriculum.

1.6.2 Summer semester is a short duration semester program that will be generally conducted during the semester break between even semester and odd semester. The students having 'R' (Repeat grade) courses may register for the course work during this semester to get a chance for successfully completing the 'R' courses. In general, supplementary assessments are conducted in the later part of the summer semester. However, the courses offered in summer semester and the number of courses a student can register are subjected to academic and administrative convenience. A student may register up to a max. of 16 credits in a summer semester.

1.6.3 Exception to the routine practice of registering for 'R' courses in summer semester, a student can register in a course offered by a visiting expert during the summer vacation which may be equivalent to an open elective or a department elective or an Add-on-course. The candidates can register for such courses within the scope of 16 credits. Candidate may also avail summer semester for summer internship opportunities, which may be considered as Add-on credits.

1.6.4 Summer internship credits will also be appended to the credits of Department elective / Honours / Minor / Add-on certification provided the theme of internship is in accordance with the specialization.

1.7 Semester-wise Provisions

A student may register for a max of 25 credits per semester as prescribed or otherwise he/ she may include the Repeat courses in the event of having not successfully completed a course or courses in the earlier semester. However, a student may also opt to go in a slower pace to earn the credits less than the prescribed max of 25, including even 'Dropping' a semester for special reasons.

It should be clearly underscored that a candidate should on priority register for Repeat (R) credits if any, during a regular semester, within the said scope of 25 credits; in case he / she cannot be sure of completing the 'R' credits in Summer semester.

1.7.1 During the first four years from the date of admission to B.Tech., a candidate has to pay the semester / annual fees as prescribed irrespective of the smaller number of credits / semesters that he / she would register or even opt to Drop a semester.

1.7.2 If a candidate gets into spill over semester beyond four years up to a maximum of seven years he / she has to pay semester fee proportional to the credits that he/ she registered in that spill over semester as prescribed from time to time.

1.7.3 A candidate has to pay additional fee proportional to the number of credits for registering in a summer semester as prescribed from time to time.

2. CURRICULUM

Each School offers different B.Tech. degree programmes and the departments concerned prescribes semester-wise curriculum encompassing different courses. Every course offered will be designated in a L-T-P-SL structure. The theory courses comprise of L (and / or T & P hours) whereas the practical courses include instructions (T) and practical sessions (P). Amalgamation of theory courses with practical sessions is predominantly seen in this curriculum. The 'SL' represents the expected self-learning hours (to be carried out by each student) in a particular course.

During the first year, some of the courses may be offered in a swap mode, that is the same course is offered in both the semesters of I-year to accommodate the academic and administrative requirements.

2.1 Distribution of credits

The overall distribution of credits for various categories of courses in the curriculum of B.Tech. programmes is represented in Table 1.

Table 1: Credits distribution for various categories of courses.

Category of Courses	Number of Credits	Percentage of Credits	AICTE Recommendation (%)
Professional Core	72	40.90%	30 - 36%
Electives (Department & Open / I^2C)	15	8.52%	19 - 23%
Basic Engineering	43	24.43%	10 - 18%
Humanities and Management	8	4.55%	08 - 09%
Basic Sciences	22	12.50%	12 - 16%
Projects/Internship	16	9.10%	08 - 11%
Total	**176**	**100%**	-
Binary graded	**8**	**-**	-

2.2 Organization of Course Contents

Courses offered in the program are composed of two modules, covering all the course contents required for a candidate to obtain knowledge and skill. Module-1 is divided into two units, focusing on the 'Fundamentals and Broad Perspective' of the course while also introducing basic applications to establish a practical context. In contrast, Module-2 is divided into three units, which encompass the extension and advanced topics of Module-1. Both modules will include a separate list of suggested transactions or practices tailored to its content. These transactions / practices are essential for validating and applying the knowledge gained during Lecture sessions.

Module-1 may be completed within 5 to 6 weeks, while Module-2 may require 9 to 10 weeks. By the end of each module a candidate must be in a position to translate his/ her L-based knowledge into P-based skill as prescribed in the curriculum. Individual formative assessment shall be in place for each module and a single semester-end summative assessment for the course composed of both the modules.

The course contents are mapped with relevant Sustainable Development Goals (SDGs), ensuring alignment with global sustainability objectives. Additionally, where authenticated information is available, Indian Knowledge System (IKS) topics are incorporated into the curriculum.

Each course must have 4 to 6 course outcomes (COs) mapped to relevant program outcomes (POs), aligning with the revised Bloom's Taxonomy levels 3, 4, 5, and 6 ensuring progressive cognitive development. Furthermore, every course has at least one mandatory textbook and two to three reference books to provide students with credible and in-depth learning resources.

2.3 Prerequisite Knowledge

Wherever prerequisite knowledge is specified, students must have exposure to the prescribed prerequisite content before registering for the higher-level course. Completion of the prerequisite course, earning credits, or successful completion of assessments in the prerequisite course is not mandatory, unless explicitly specified for a particular course.

3. NATIONAL CREDIT FRAMEWORK / CHOICE BASED CREDIT SYSTEM

Each branch discipline of the B.Tech. programme comprises of a set of courses - basic sciences, humanities and management, basic engineering, professional core, electives, employability & life skill courses. VFSTR offers flexibility for students to choose courses of their choice and obtain the credits satisfying the minimum credits criterion in each category as given in Table (1).

3.1 Basic Sciences and Humanities

Basic science courses are included to provide engineering students with a strong foundation in scientific principles that support technological advancements and problem-solving. Courses in Management and Humanities are also included to develop their professional competence and interpersonal skills. Management courses equip students with essential skills in leadership, decision-making, and project management, preparing them for both technical and managerial roles in their careers. Humanities courses enhance their ability to communicate effectively, think critically, and uphold ethical and professional responsibilities.

3.2 Basic Engineering

Basic engineering courses are those that every engineer, irrespective of his/her discipline, ought to understand to perform well in his/her discipline. Engineering Drawing, Cyber Security, and Computer Programming are some of the courses that fall in this category. The category also provides exposure to emerging approaches and tools, including Agentic AI and Design Thinking, to enhance students' ability to approach engineering problems creatively, systematically, and effectively.

3.3 Professional Core

Professional Core courses are individualized for each programme and they are mandatory for every student opting for that branch discipline. These are designed to offer the essential fundamental knowledge and skills required for that specific programme.

3.4 Electives

A candidate has a choice to choose the elective courses. A list of elective courses is pooled together, enabling a candidate to choose electives from a pool so that he/she can focus on a specific theme. Otherwise also he/ she can also exercise the choice to choose electives from across the pools. There may be courses which may not be listed under any pool, which are called 'Free elective courses.'

Elective courses offered for each programme are categorized as 'department electives' and 'open electives.' Some electives may have pre-requisites i.e., successful completion of a course / knowledge of a course / the department's consent.

3.4.1 Department Electives

'Department electives' are those courses that are aimed at offering the advanced/ additional knowledge in the chosen branch discipline.

Care should be exercised while opting for departmental elective courses and specialization courses such that a course opted as departmental elective should not be registered as a course under specialization and vice versa.

3.4.2 Open Electives

The elective courses offered by the departments/ centers/ themes for other department students are called as open electives. These electives are offered to enable students understand interdisciplinary nature of courses. A student's enrollment for pursuing an open elective course(s) is based on his/her choice and order of merit and subject to availability of seats.

Elective courses are spread over four semesters from fourth to seventh semester, to enable students earn credits from a chosen pool or otherwise.

Care should be exercised by the candidate while opting for Open electives and minor courses, such that a course opted as Open elective should not be registered as a course under Minor and vice versa.

In 'electives' category, a student is required to secure a minimum of 9 credits. These credits can be obtained through a combination of courses from his / her own department and other departments.

- Out of the assigned credits, offered under the "electives" category, **9 credits have to be earned through MOOCs** offered via Swayam platform. A student may also be permitted to earn more elective credits through MOOCS. This will promote self-learning and drive students towards innovative learning approaches. To facilitate the process of acquiring the elective credits through MOOCS, VFSTR has constituted "Online Course Committee" at Central level with 1-2 members represented from each of the department to guide students in selection of courses and to assist them with further steps if required until completion of the courses.

- Under the "Creative Work-in-Lieu of a Course" category, students must earn up to 3 credits in place of Departmental Electives (DE) through notable academic and professional achievements such as research paper publications, book chapters, patents, presentations (oral/poster), global certifications, and internships. This initiative encourages creative and holistic exploration of academic and professional avenues, fostering deep exploration of specialized fields. This provision applies between the 4^{th} and 8^{th} semesters. A range of 1 to 3 credits shall be awarded to the student's based on the significance of contributions. Students can earn credits through a single activity or by accumulating credits from multiple activities. The exact allocation of full or partial credits depends on the student's level of contribution and will be decided by department-level committee chaired by Head of the department.

3.5 Project

Students have to undergo full year Project work as Project-I (3 credits) during 7^{th} semester and as Project-II (4 credits) during 8^{th} semester. During the semester the student under the guidance

of a faculty member(s) will involve in innovative design / research through the application of his / her knowledge gained in various courses studied. He / she is therefore expected to present a survey of literature on the topic, work out a project plan and carry it out through experimentation / modelling / simulation / computation. Through such a project work, the student is expected to demonstrate system analysis, design, presentation and execution skills. Students are expected to integrate design component into their project to realize various aspects such as User-Centric Focus, Consistency and Branding, Efficiency and Scalability, Improved Communication, Adaptability and Innovation, Faster Development Cycles, Enhanced User Engagement and Satisfaction etc. Comprehending design component should be documented in the project report by incorporating 'Major Design Experience Information Sheet'. Performance in the project will also be assessed in the modular framework for formative and semester-end summative.

Furthermore, a special provision has been introduced to enable students to undertake full-year project work, provided they meet the eligibility criteria prescribed by the Institute. Under this framework, students will complete a 3-credit project in the 7th semester, while the 8th semester will follow the standard 4-credit project structure. This opportunity allows students to develop deeper expertise in their subject area and enhances their ability to undertake comprehensive research or design-oriented projects.

3.6 In Plant Training/Internship

A student can undertake internship or in-plant training in lieu of project work in industry for one complete semester during eighth semester in lieu of major project work. It bears a weightage of 8 credits (240 hours). This is aimed at training students in solving / understanding real-life problems through application of engineering analysis, design, evaluation and creation, particularly in association with practitioners and experts in the industry. The procedures for obtaining the internship placements and allocation of the same to the students are as per university defined norms outlined in the 'internship programme operational guidelines' manual. Even during internship, a student is preferably expected to carry out a focused study on one topic/ problem in consultation with the interning institute. Internship progress report should be submitted periodically and finally a detailed internship report should be submitted duly certified by a mentor from the internship institute. Performance in the internship will also be assessed in the modular framework for formative and semester-end summative.

Furthermore, a special provision has been introduced to enable students to undertake a year-long internship at industries, provided they meet the eligibility criteria prescribed by the Institute. Under this framework, students will complete an 8-credit in-plant training/internship in the 8th semester. Students choosing the yearlong industry internship will gain hands-on experience in a professional environment, integrating academic knowledge with industry applications.

3.7 Binary Graded Courses

Apart from I^2 courses, following courses shall also be offered as 'Compulsory Binary Grade Courses'. Courses like the Orientation session (Induction program); Constitution of India; Self-understanding and Gender Sensitization; Physical fitness, Life skills, Indian Culture and Heritage, Do-It-Yourself, Universal Human Values, constitution of India and Indian Knowledge Systems etc. will be offered to students during the first four semesters of the programme. This list is not comprehensive; the institution may add or remove courses based on their relevance and student registrations.

3.7.1 Deeksharambh (Orientation Session)

Orientation session is an Deeksharambh program that students have to register for 2 weeks before commencement of first semester. The course will include, but not restricted to, discussions on operational framework of academic process in university, interactions with alumni, business leaders, scientists, and perspective employers, University academic and research managers and classes on personality development (installing life and social skills. Social awareness, ethics and values, team work, leadership etc.) and communication skills. Steps will be taken to identify the strength and weakness of students (with remedial measures) and diverse potentialities and to enhance cultural Integration of students from different backgrounds. It will also create a platform for students to learn from each other's life experiences.

3.7.2 Physical Fitness and Social Activities

As physical fitness contributes to physical, mental and social development, it is offered as a coursework (NCC/NSS). Physical Directors and trainers will assist the students for improving physical fitness in regular sessions. 1-2 Coordinator from department side appointed for mentoring properly also.

3.7.3 Life Skills

Realizing the VFSTR's Vision of preparing multifaceted personalities, VFSTR floats various credit-based life skill activities for students such as yoga, dance, music etc., under the guidance of experienced coaches.

In case the candidate does not successfully complete the binary graded courses, they will be placed under 'R' category. However, such R should be completed in regular Odd / Even semester whenever these courses are offered. In special cases provision of summer semester may be provided.

4. ATTENDANCE

It is mandatory for the student to attend the course work in each semester as per the academic schedule of that semester. VFSTR expects 100% attendance. However, the attendance in each course shall not be less than 75 % of the aggregate of all L, T, P sessions conducted in that course. In order to encourage the students attending the L, T, and P sessions, a provision of earning maximum of 2 or 5 marks (depending on the courses) is given in the assessment framework and the students can earn these marks based on their attendance percentage in each course.

a) The attendance calculations will be periodically reviewed at the end of every 4 weeks. The details of attendance status will be shared with the parents / guardian. The final status of attendance will be reported at end of 14^{th} week granting the advantage of the attendance for the 15^{th} week for the purpose of attendance shortage calculations.

b) The shortage of attendance may be condoned up to 10% on the ground of ill-health, social obligations, participating / representing in sports/cultural events, placement activities etc.

c) Documentary evidence like medical reports and certificates issued by concerned bodies is to be produced on time as support for the attendance shortage due to ill-health. These cases are subjected to the scrutiny of a committee constituted for this purpose by the Dean – AAA. The decision of the committee shall be final.

d) Prior approval has to be taken from the HoDs for the other types of leaves.

e) The courses where the student shortage of attendance was not condoned shall be considered as 'Repeat' category courses and will be under 'R' grade in the student's semester transcript. Student should re-register for these courses during the summer semester or whenever the course is offered next time during regular semesters. These re-registrations are subjected to the regulations at the time of re-registration. In case of core courses, the same core course has got to be re-registered. However, in case of an elective a candidate may exercise a choice of choosing different elective in place of 'R' graded elective.

The students who are put into 'R' grade will not be allowed to take up the summative assessment in that semester. In case due to lack and/or delay in information, if he/she appears for the summative assessment in that course, the Office of Dean - AAA is empowered to cancel the attended assessments. The scores obtained either in formative or summative assessment will not be considered for grading.

5. ASSESSMENT

Teaching-Learning and Assessment should go hand in hand and complement each other. Continuous assessment plays a vital role to enable the student to get synchronized with the teaching-learning process. Assessment mechanism adopted in the institute is aimed at testing

the learning outcomes in tune with the outcome-based model of education. The focus, is thus on assessing whether the outcomes are realized by the end of the course.

The performance of a student in each course is assessed on a continuous basis during the semester through various in-semester and end-semester assessment models. The marks awarded through continuous assessment are referred to as Formative assessment marks. The marks awarded through end-semester tests are referred to as Summative assessment marks (Figure 2). Both the formative and summative assessment marks are considered for awarding the final marks and the grade point in a particular course.

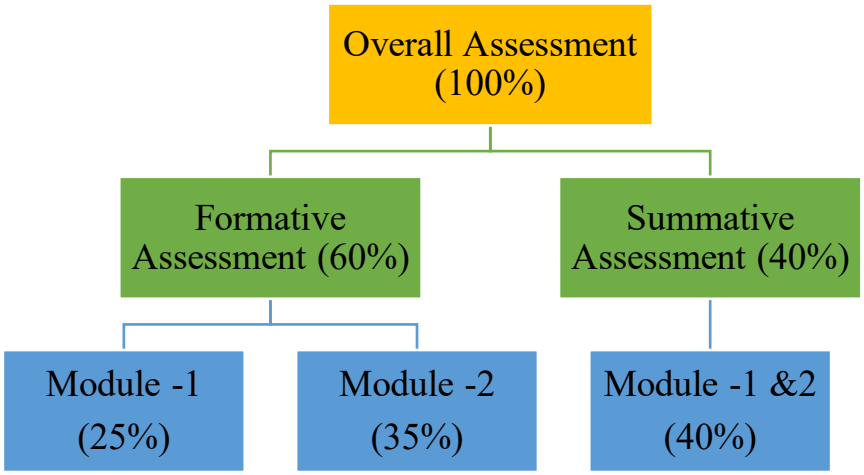


Figure 2: Categories of assessments in place for R26.

5.1 Marks Distribution

For each course, the maximum sum of formative and summative assessment marks put together is 100, in the ratio of 60:40, respectively. Furthermore, the 40 marks allocated for the summative assessment shall be further divided between L-based and P-based assessments in a ratio of 25:15 marks respectively.

5.2 Qualifying Criteria

To be declared successful in a course, the students must satisfy the following hierarchy of qualifying criteria:

i. Attendance compliance should be 75% or within condonable range; else the candidate is put into 'R' grade.
ii. In formative assessment, a candidate should secure a minimum of 50% *i.e.* 30 marks out of 60; else the candidate is put into 'R' grade.
iii. In summative assessment, a candidate should secure a minimum of 40% *i.e.* 16 marks out of 40; else the candidate is put into 'I' (Incomplete) grade.
iv. Collectively a Candidate should secure minimum of 50% *i.e.* 50 marks out of 100; else the candidate has to choose either 'R' or 'I' grade duly being counselled.

The candidates with 'R' grade should re-register for 'R' courses either in Summer semester or in a regular semester as and when the courses are offered. The candidates in 'I' grade are allowed to appear for supplementary summative assessment whenever the semester-end assessments are conducted.

To assess Binary graded courses / special projects / courses, not fitting into the categories described here, a suitable assessment procedure will be evolved in consultation with experts of that area and adjudicated by the committee constituted for that purpose. The decision given by the committee will be final. The appended assessment scheme shall be announced by the course coordinator during the commencement of course.

5.3 L-based courses integrated with P/T (L+P/ L+T/ L+T+P)

5.3.1 Formative Assessment

The scheme of formative assessment is designed to promote continuous learning and continuous engagement throughout the semester. The formative assessment framework comprises scheduled Formative Assessments (FA) and Continuous Learning Assessments (CLA), distributed across the two-module course structure. The assessments are designed to monitor students' progressive attainment of course learning outcomes through periodic evaluation, continuous academic engagement, practical activities, assignments, and experiential learning.

The formative assessment framework extends across the 15-week instructional period, with Module-1 covering Weeks 1–6 and Module-2 covering Weeks 7–15. The four scheduled Formative Assessments are conducted at appropriate stages of the semester, while Continuous Learning Assessments are carried out progressively during the respective periods of instruction. The assessment modalities shall be communicated to students by the respective course instructor at the beginning of the course.

The suggestive modality of formative assessment is given below:

a) **FA-1**: As outlined in Section 2.2, Module-1 is conducted over a shorter duration, emphasizing the fundamentals and broad perspectives of the course. In tune with this, the assessment shall be based on Revised Bloom's Taxonomy Levels 1, 2, and 3, with an emphasis on remembering, understanding, and applying. FA-1 shall assess the learning outcomes associated with Unit-1 and shall be a paper-based, proctored test conducted for 30 minutes and evaluated for a maximum of 10 marks. The question paper shall consist of two 5-mark questions and shall be conducted at the end of third week after commencement of the course.

b) **FA-2:** FA-2 shall be conducted on completion of Module-1 and shall assess the learning outcomes associated with Unit-1 and Unit-2, covering the breadth of the Module-1 content. The assessment shall provide opportunities for students to demonstrate learning across the relevant levels of the Revised Bloom's Taxonomy, with greater

emphasis on application and analysis. FA-2 shall be a paper-based, proctored test conducted for 60 minutes and evaluated for a maximum of 20 marks. The question paper shall consist of four 5-mark questions and shall be conducted at the end of the sixth week after commencement of the course.

c) **FA-3**: As outlined in Section 2.2, Module-2 emphasizes higher-order learning, problem-solving, and innovation, building upon the foundational knowledge developed in Module-1. In tune with this, FA-3 shall assess the learning outcomes of the first part of Module-2, covering Unit-3 and the initial portion of Unit-4, with greater emphasis on application, analysis and evaluation in accordance with the Revised Bloom's Taxonomy. FA-3 shall be a paper-based, proctored test conducted for 60 minutes and evaluated for a maximum of 20 marks. The question paper shall consist of four 5-mark questions and shall be conducted by the end of the tenth week after commencement of the course.

d) **FA-4:** FA-4 shall assess the remaining content of Module-2, covering the concluding portion of Unit-4 and Unit-5, with greater emphasis on application, analysis, and evaluation in accordance with the Revised Bloom's Taxonomy. FA-4 shall be a paper-based, proctored test conducted for 60 minutes and evaluated for a maximum of 20 marks. The question paper shall consist of four 5-mark questions and shall be conducted by the end of the fifteenth week after commencement of the course.

e) There shall be no internal choice of questions in FA-1, FA-2, FA-3, or FA-4. FA-1 may be scheduled along with up to three courses on a day, whereas FA-2, FA-3, and FA-4 may be scheduled along with up to two courses on a day.

f) **Continuous Learning Assessment (CLA)**: CLA-1 to CLA-4 shall be conducted progressively throughout the semester to assess students' continuous learning and academic engagement.
   i. Each CLA shall carry a maximum of 10 marks.
   ii. For P-based courses, each CLA shall comprise two laboratory experiments, each carrying 10 marks, with the combined score of 20 marks being scaled to 10 marks for the respective CLA.
   iii. For L/T-based courses, each CLA shall comprise an appropriate assignment and/or class assessment aligned with the learning outcomes of the corresponding instructional period. The assessments shall provide continuous opportunities for students to demonstrate their learning and receive feedback on their progress.

g) **Module-1 CLA:** CLA-1 and CLA-2 shall be conducted during Weeks 1–3 and 4–6, respectively, covering the corresponding learning experiences of Module-1.

h) **Module-2 CLA:** CLA-3 and CLA-4 shall be conducted during Weeks 7–10 and 11–14, respectively, covering the corresponding learning experiences of Module-2.

i) **CLA-5 – Experiential Learning:** CLA-5 shall provide students with opportunities to apply their knowledge and skills through experiential and application-oriented learning activities during Weeks 11–15.
   i. It shall carry a maximum of 10 marks, comprising 8 marks for the experiential learning activity and 2 marks for attendance.

ii. For P-based courses, the experiential learning component shall comprise an internal laboratory assessment based on the experiments covered or a mini project, as prescribed for the course.
iii. For L/T-based courses, it may comprise a seminar, mini project, case study, or real-time example, as appropriate to the course content and learning outcomes.
iv. MCQ-based activities and SDG-related activities may also be incorporated where relevant to the course content and learning outcomes, with appropriate documentation.

j) **Attendance:** The 2 marks allocated for attendance under CLA-5 shall be awarded as follows: 2 marks for attendance of 90 to 100% and 1 mark for attendance of 80 to <90%.
k) The scores of each formative assessment shall normally be announced within three working days of completion of the assessment, and the performance of students shall be discussed in the class to facilitate timely feedback and improvement.
l) The total formative assessment marks for Module-1 shall be 50, comprising FA-1 (10), FA-2 (20), CLA-1 (10), and CLA-2 (10). These marks shall be scaled to a maximum of 20 marks, contributing 20% of the total course assessment.
m) The total formative assessment marks for Module-2 shall be 60, comprising FA-3 (20), FA-4 (20), CLA-3 (10), CLA-4 (10). These marks shall be scaled to a maximum of 30 marks, contributing 30% of the total course assessment.
n) The total formative assessment marks for CLA-5 shall be 10. These marks shall be scaled to 8 marks and 2 marks for attendance.
o) The consolidated formative assessment score shall be finalized and submitted before commencement of the L-based summative assessment to facilitate the declaration of the formative 'R' grade.
p) A candidate placed under 'R' shall not be permitted to take up the L-based summative assessment.

5.3.2 Summative Assessment

Summative assessment activities including timetables, question paper model, duration of the examinations will be informed to the students well before the commencement of the examinations in the form of circulars from Dean-AAA's office.

a. Unless specified otherwise one of the following formats may be used for summative assessment for L-based courses integrated with T/P.
    i. 15 (P) + 25 (L) marks format (L+P or L+T+P courses).
    ii. 40 marks format (L+T courses).
b. **If summative assessment is in two parts formats:**
    i. **P-based assessment** shall comprise the exploratory review assessment of all lab practice assignments or a capstone project pre-assigned during the module-2 period, for a maximum of 40 marks.
    ii. **L-based assessment** shall comprise a written examination for a maximum of 80 marks. This assessment shall be conducted by the Institute for a duration of 180 min. The contents for summative

assessment shall cover the breadth and depth of the complete syllabus prescribed across the two modules of the course.

iii. The question paper for L-based summative assessment shall consist of two parts as given in Table 2.

Table 2: L-based Summative Assessment Question Paper Pattern.

Part No.	No. of Questions	Marks per Question	Choice	Marks
A	6	10	Answer any 5	50
B	3	15	Answer any 2	30
			Total Marks	80

iv. Each question shall comprise three sub-questions, with the distribution of marks among the sub-questions designed appropriately to assess the intended learning outcomes and relevant levels of the Revised Bloom's Taxonomy.

c. A candidate should attend both the parts of summative assessments; else he will be put into I grade.

d. The marks obtained in the P-based summative assessment, out of a maximum of 40 marks, shall be scaled to a maximum of 15 marks, while the marks obtained in the L-based summative assessment, out of a maximum of 80 marks, shall be scaled to a maximum of 25 marks.

e. Total marks of summative assessment will be for a max. of 40 irrespective of format of evaluation.

f. The award of 'I' grade is solely based on marks scored in summative assessment out of 40, if he/she does not score a min. 16 out of 40 (40%).

5.4 P-based Courses (P/ T+P/ T)

The detailed information consisting of experiments, batch formation, experiment schedules, etc., shall be displayed/informed to the students in the first week of the semester so that they come prepared for the laboratory sessions. Copies of the laboratory manual shall be made available to the students along with the schedule. The laboratory manual shall consist of the list of equipment, detailed procedures for conducting the experiments, format for record writing, expected learning outcomes for each experiment, and relevant short questions to facilitate conceptual understanding and critical thinking. Courses such as Cyber Security, Engineering Graphics, Design Thinking & Engineering, and courses offered under the Honours/Minor categories, as well as other courses designated under the P-based category, shall be treated as P-based courses.

5.4.1 Formative Assessment

The scheme of formative assessment for P-based courses is designed to promote continuous learning, practical engagement, and experiential learning throughout the semester. Unlike L-based courses integrated with P/T, P-based courses shall not have separate Formative

Assessments (FA-1 to FA-4). The formative assessment shall comprise Continuous Learning Assessments (CLA-1 to CLA-5) conducted progressively across the two-module structure and through experiential learning activities.

The suggestive modality of formative assessment is given below:

a. **Continuous Learning Assessment (CLA):** CLA-1 to CLA-4 shall be conducted progressively during the respective instructional periods to assess students' continuous learning and practical engagement. CLA-1 to CLA-4 shall carry a maximum of 10 marks.
b. Each CLA shall comprise two laboratory experiments/practice sessions, each carrying 10 marks, with the combined score of 20 marks being scaled to a maximum of 10 marks for the respective CLA.
c. The assessment of laboratory experiments/practice sessions may include appropriate components as mentioned in table 3 such as viva-voce, experimentation and data collection, analysis and interpretation of results, and submission of the laboratory record/report, as appropriate to the nature of the course.

Table 3: Suggested parameters for Lab Practice Assessment (CLA)

S. No	Component	Marks
1	Experimentation and data collection	2
2	Analysis of experimental data and interpretation	2
3	Viva and interaction to evaluate understanding of concepts	2
4	Laboratory record/ report	4
	Total	**10**

d. **Module-1 CLA:** CLA-1 and CLA-2 shall be conducted progressively during Weeks 1–3 and 4–6, respectively, covering the corresponding learning experiences of Module-1.

e. **Module-2 CLA:** CLA-3 and CLA-4 shall be conducted progressively during Weeks 7–10 and 11–14, respectively, covering the corresponding learning experiences of Module-2.

f. **CLA-5 – Experiential Learning:** CLA-5 shall provide opportunities for students to apply their practical knowledge and skills through experiential and application-oriented learning activities. It shall carry a maximum of 20 marks, comprising 15 marks for experiential learning assessment and 5 marks for attendance.

i. The 15-mark experiential learning assessment shall be based on appropriate practical or experiential activities, such as an internal laboratory assessment, mini project, or other course-specific activity, as prescribed for the course.
ii. The 5 marks for attendance shall be awarded as follows:

Table 4: Marks distribution for Attendance

Attendance	**95–100%**	**90–<95%**	**85–<90%**	**80–<85%**	**75–<80%**	**<75%**
Marks	5	4	3	2	1	0

g. The total formative assessment for P-based courses shall therefore carry a maximum of 60 marks, comprising 20 marks from Module-1, 20 marks from Module-2, and 20 marks from CLA-5.

5.4.2 Summative Assessment

The end-semester summative assessment for each P-based course shall be conducted for a maximum of 40 marks. The assessment shall be designed to evaluate the student's ability to perform practical activities, demonstrate conceptual understanding, analyse experimental observations, interpret results, and respond to relevant questions. The detailed scheme of assessment may vary depending on the nature and requirements of the laboratory/course and shall be communicated to the students by the laboratory in-charge before the commencement of the summative assessment.

The end-semester examination for each practical course shall be conducted jointly by two examiners. The internal examiner shall be the faculty member who has conducted the practical sessions and associated activities throughout the semester. The external examiner shall be nominated from within the department and shall be familiar with the practical components of the course but shall not have been directly involved in its delivery. The general scheme of assessment is given in Table 5.

Table 5: Suggested End-Semester Summative Assessment Pattern for P-based Courses

Component	**Examiner 1**	**Examiner 2**	**Total**
Objective and procedure write-up, including outcomes	4	4	8
Experimentation and data collection	4	4	8
Computation of results	4	4	8
Analysis of results and interpretation	4	4	8
Viva-voce	—	8	8
Total Marks	**16**	**24**	**40**

The assessment components may be suitably modified according to the nature of the laboratory/course, while ensuring that the summative assessment comprehensively evaluates the intended practical learning outcomes.

The total marks obtained in the summative assessment shall be for a maximum of 40 marks.

5.5 Assessment and Grading of MOOCs-based Elective

Whenever a candidate opts for a course through MOOCS offered via Swayam platform, he / she has to learn and undergo assessment as per norms set by VFSTR for such MOOCs Courses. Upon the declaration of the result, that the candidate has successfully completed the course, the candidate is said to have earned the credits under credit equivalence and credit transfer.

5.6 Minor Project/Inter-departmental Project / Field Projects

Minor Project/Inter Departmental Project / Field Projects / Societal-Centric Project work is undertaken for earning 1 credit per project by each candidate. In case of Minor Project, it is expected that the students undertake the project work to apply foundational knowledge learnt in 1st year to real-world problems while developing problem-solving, teamwork, creativity, and technical communication skills. It is expected that the inter-departmental projects in 2nd and 3rd year result in publication of a technical paper in a peer-reviewed journal / top-notch conference. For this purpose, Heads of Department will identify and appoint faculty mentors who offer technical expertise/ guidance to students for defining clear, achievable objectives and milestones for their projects.

5.6.1 Formative Assessment

The assessment will be carried in a systematic way wherein first review is conducted during module-1 and second review during module-2 period. The detailed assessment guidelines and scheme are to be announced along with the assessment schedule as mentioned in the Table 6.

Table 6: Schedule and parameters followed for formative assessment.

Module	Schedule	Review	Points to be considered	Formative assessment marks
Module -1	5th – 6th week	Review -1	• Identification of specific area out of broad areas under the supervisor • Identification of outcomes in line with programme objectives. • Identification of tools / equipment / surveys / training needs / etc. • Completion of literature survey • Readiness of about 25% documentation	30
Module - 2	14th – 15th week	Review -2	• Presentation of results, analyses and conclusions	30

Module	Schedule	Review	Points to be considered	Formative assessment marks
			• Meeting of objectives defined in first review • Preparation of report • Understanding by individual students on the overall project	

5.6.2 Summative Assessment

Summative assessment will be done jointly by two examiners (both from VFSTR) wherein one as internal examiner and the other as external examiner. These examiners will be appointed by School Dean from the panel of examiners suggested by the respective Head of the Department. The scheme of assessment will be report (15 marks), presentation (10 marks) and demonstration (15 marks) respectively.

Points to be considered during the review.

i. Presentation of results, analyses and conclusions
ii. Meeting of objectives defined in first review
iii. Preparation of report
iv. Understanding by individual students on the overall project
v. Individual student contribution

5.7 Project

Those students who do not opt for the semester-long internship, carry out their major project at VFSTR and submit their report which is a mandatory requirement for the award of degree. These projects are usually done in batches (not exceeding five students in a batch), during the VIII semester, under the guidance of a faculty member. Every batch, in consultation with the guide, should define the project and also the probable procedure of carrying it out and submit the same to a committee consisting of 2 to 3 faculty members appointed by Head of the Department. This is to avoid the repetition and also to come up with a roadmap for completion of the project within the time stipulated. The students are encouraged to select topics related to ongoing research and consultancy projects. The students are expected to carry out and present a survey of literature on the topic, work out a project plan and its implementation through experimentation / modelling / simulation / computation. They are also expected to exhibit system analysis, design, and presentation and evaluation skills. The entire process of grouping of student batches, and identification of respective guides etc., is to be completed by the end of VII semester, so that students can start of their project work immediately after VII semester.

5.7.1 Formative Assessment

The progress of project is reviewed twice in a module by the Project Review Committee (PRC) and formative assessment marks are awarded based on these reviews. The Project review committee consists of:

a) Head of Department or his/her nominee – Chairperson
b) A senior faculty member identified by the HoD – Member
c) Project supervisor – Member

Review schedules of PRC are to be announced by the department immediately after the commencement of class work. The review presentations are open to all the students of that section and attendance is compulsory. The first review should be of 15 minutes / batch; the remaining reviews should be around 30 minutes / batch. Before every review the batches should submit their PPT along with a brief report of not exceeding two pages. It is to be expected by the committee that student communicates/publishes research article based on the project work prior to graduation. The following aspects may be considered by the committee for assessment Table 7.

Table 7: Schedule and suggested parameters to be considered for formative assessment.

Module	Schedule	Review	Points to be considered	Max. Marks
Module -1	4th week	First review	• Identification of specific area out of broad areas. • Identification of outcomes in line with programme objectives • Feasibility of contributing to the attainment of outcomes • Awareness on components mentioned in Project Experience Information sheet	20
Module – 2	12th week	Second review	• Acquisition / learning of the tool required • Readiness of the layout of the project report • Progress review as per mechanism/ schedule identified • Individual student contribution in above activities	20
	16th week	Third review	• Presentation of results and conclusions • Meeting of objectives defined in first review • Submission of draft report • Understanding by individual students on the overall project • Individual student contribution • Progress of project as per schedule	20

5.7.2 Summative Assessment

At the end of the semester, during 18th to 20th week of the semester the summative assessment will be conducted in two phases.

Phase–I (during 18th -19th week): This is an evaluation for a max of 20 marks. A committee of two members comprising of HoD's nominee and Guide will assess the project work which will involve going through the project report (6 marks), project presentation (7 marks) and demonstration of the project (7 marks).

Phase–II (during 20th week): A final presentation and defense assessment for a max. of 20 marks will be carried out by one-man committee composed of an external expert who is chosen by the Dean AAA from a panel of examiners suggested by the HoD. The format for evaluation will involve going through the project report's quality (6 marks), presentation (6 marks) and interaction and defense (8 marks).

The qualifying marks will be finalized considering the marks scored in both the phases (I & II) of summative assessment.

In case the candidate is placed in 'I' grade, he/she has to appear for both Phase-I and Phase-II assessments, which will be held within the 15 days after declaration of results. In the consecutive assessment also if the candidate fails to secure min. required score, then he/ she will be placed in 'R' grade.

5.8 Semester-long Internship

Internship work is undertaken either in the VII or VIII semester by a student in an industry, under the joint supervision of industry personnel and an internal faculty member. Sixty percentage of the marks of Internship are allotted through continuous evaluation as formative assessment (Table 5) and the remaining 40% are based on end semester assessment.

5.8.1 Formative Assessment

The internal supervisor will interact with the guide allotted at internship offering industry based on the schedule given to conduct the reviews. Scheduled reviews can be conducted by IRC on online mode for discussion/ presentation. The 20 marks obtained by students for each review will be scaled to allotted marks as given in Table 8.

Table 8: Assessment scheme for Internship reviews.

Module	Review	Schedule	Formative assessment marks
Module -1	First review	4th week	20

Module	Review	Schedule	Formative assessment marks
Module – 2	Second review	12th week	20
	Third review	16th week	20
Total			**60**

a) The progress of internship work is reviewed in every module by the "Internship Review Committee" and marks for formative assessment are awarded based on these reviews.

b) The Internship Review Committee (IRC) consists of Head of Department or his/her nominee (Chairperson), the internal and external (industry) supervisors.

c) The IRC may not be the same for all students; however, the same IRC should exist for entire duration of the internship program of any single student.

d) The schedule and the scheme of evaluation are to be announced with internship notification. The internship reviews may take place at the place of internship or at the university, as decided by the interning organization or may be conducted in the blended mode.

- **For Internal Reviews at the Place of internship**

a) Students should submit a report (not more than two pages) explaining about the progress of their work, mentioning clearly details like the machines or software handled / adopted, type of data collected and his/her understanding and contribution in the programme, and the same has to be presented before the supervisors.

b) The candidate should clearly present the completion of stipulated assignments set by the industry supervisor for that period.

c) The evaluation will be based on a & b above and also based on regularity and discipline maintained in the internship venue (Table 9).

Table 9: Suggested scheme of assessment for every review.

Component	Total
Regularity and interaction	5
Application of knowledge	3
Gaining of new knowledge /skills / literature survey	5
Internship progress	4
Report	3
Total marks	**20**

5.8.2 Summative Assessment

At the end of the semester, the student shall submit a comprehensive report of internship covering the work done and make a final presentation in two phases as follows:

Phase–I (during 18th - 19th week): A committee of two members comprising of internal supervisor and HoD's nominee will assess the overall internship participation by the candidate and his final report through presentation made by the intern. The internship report (6 marks), presentation (7 marks) and overall impression (7 marks) during the internship will be evaluated respectively.

Phase–II (during 20th week): A final presentation and defense assessment for a max. of 20 marks will be carried out by one-man committee composed of an external expert who is chosen by the Dean AAA from a panel of examiners suggested by the HoD. The format for evaluation will involve going through the project report's quality (6 marks), presentation (6 marks) and interaction and defense (8 marks).

The qualifying marks will be finalized considering the marks scored in both the phases (I & II) of summative assessment.

In case the candidate is placed in 'I' grade, he / she has to appear for both Phase-I and Phase-II assessments, which will be held within the 15 days after declaration of results. In the consecutive assessment also if the candidate fails to secure min. required score, then he/ she will be placed in 'R' grade.

5.9 1-Credit Binary Graded Courses

1-Credit Binary graded courses aim to simplify the grading process and encourage students to focus on learning and achieving the mastery rather than the pursuit of specific grades. Unlike traditional grading systems, binary graded courses offer only two possible outcomes i.e., Pass grade / R-grade. To obtain Pass grade, a candidate should maintain 75% of attendance and secure a minimum of 50% score ~~(i.e. 50 marks out of 100)~~ in each course; else the candidate shall be placed into 'R'-grade. There shall not be any summative assessment activity for Binary graded courses.

5.9.1 Formative assessment

The assessment will be carried in a systematic way wherein two reviews per module shall be conducted as mentioned in the Table 10.

Table 10: Schedule for formative assessment.

CLA	Module	Formative assessment marks	Scaled up to
CLA -1	Module -1	10	30
CLA - 3	Module -2	10	30
Total		**20**	**60**
CLA - 5	Module – 1 & 2	20 (15 + 5 = 20 marks; 15 marks for an assessment covering Module-1 & Module-2 conducted between the 12th and 15th week, and 5 marks for overall attendance (1 mark for attendance ≥75% to <80%, 2 marks for ≥80% to <85%, 3 marks for ≥85% to <90%, 4 marks for ≥90% to <95%, and 5 marks for ≥95% to 100%).	**40**

5.10 Orientation Program (2-Credit Binary Graded Course), I²C, On-site Training, Floating Credit Courses

Orientation, I²C, On-Site Training, and Floating Credit Courses are experiential and activity-based academic components intended to provide students with exposure beyond the conventional classroom environment. These courses emphasize practical learning, innovation, industry interaction, field exposure, skill development, and application of knowledge in real-world contexts.

The assessment of these courses is based entirely on **formative assessment**, considering the nature of the activities and learning experiences involved.

5.10.1 Formative assessment

The assessment will be carried in a systematic way wherein two reviews per module shall be conducted as mentioned in the Table 11. **No summative assessment is conducted** for these courses.

Table 11: Schedule for formative assessment.

Assessment Component	Nature of Assessment	Marks	Entry
CLA-5	Formative Assessment	100	Single Entry
Summative Assessment	Not applicable	—	—
Total		**100**	

5.11 1-Credit and Other Special Category Courses

These courses are designed to provide focused, skill-oriented, experiential, practical, or interdisciplinary learning beyond the regular curriculum. Assessment is based on **continuous formative evaluation and a final summative assessment**, as applicable to the nature of the course (Table 12).

Table 12: Assessment pattern for 1-Credit and Other Special Category Courses.

Assessment Type	Component	Description	Marks	Scaled up to
Formative	**CLA-1**	30-minute proctored test with 2 questions of 5 marks each, covering Module-1, Units 1 & 2; conducted at the end of the 6th week.	10	20
	CLA-3	30-minute proctored test with 2 questions of 5 marks each, covering Module-2, Units 1 & 2; conducted at the end of the 14th week.	10	20
	CLA-5	Comprehensive assessment covering Modules 1 & 2, conducted between the 12th and 15th week.	15	20
		Attendance - Marks based on overall attendance as per the prescribed attendance bands.	5	
	Total	CLA-1 + CLA-3 + CLA-5; 40 marks scaled to 60 marks.	**60**	**60**
Summative	**SA Lab**	Final practical/laboratory-based summative assessment.	**40**	
Total		Formative Assessment (60) + Summative Assessment (40).	**100**	

5.12 Creative Work-in-Lieu of a Courses

The "Creative Work-in-Lieu of a Course" initiative aims to foster a culture of *creative exploration*, *holistic learning*, and *deep engagement* with academic and professional pursuits. By integrating diverse activities such as research, innovation, global certifications, and advanced internships, this program empowers students to achieve excellence beyond traditional coursework. The structured assessment ensures that each contribution is recognized fairly, promoting a transformative educational experience that aligns with global academic and industry standards. This provision applies between the 4th and 8th semesters. Credits for various

academic activities shall be awarded based on individual contributions ranging from 1 to 3 credits. For each category of achievement, credits may be awarded as specified in Table 13.

Table 13: Credit allocation for different achievement categories.

Categories	First Author / Sole Author	Co-Author (Max. 4 B.Tech. students)
SCI / SCI-E - Q1 & Q2	5	4.5
SCI / SCI-E - Q3 & Q4	4	3.5
Scopus / E-SCI	3.5	3
Book Chapter / Top-notch Conference publications (Scopus / SCI indexed)	3	2.5
Idea Patent Grant	3	2
Utility Patent Publication / Grant	3 / 4	2 / 3
Paper / Poster Presentations & Working Models in the top 100 NIRF rankings institutes (excluding VFSTR)	1	0
Prizes - Paper / Poster Presentations & Working Models in the top 100 NIRF rankings institutes (excluding VFSTR)	2	0
Global certifications	4	0
Special Internships (Govt. sponsored / BIRAC SITARE/ IITs/ IISc/……)	2	0

In the case of paper publications, credits shall be granted only for papers published online or with volume and page numbers. Students must submit the manuscript's initial version, review reports, responses, and the final published version for credit defense.

If credits fall short, the deficit can be addressed by reading advanced research papers under a mentor's guidance, with individual assessments conducted by the mentor. Manuscripts under review may also be considered for credit allocation. Students unable to publish by the end of 4(1) must earn credits through advanced-level NPTEL courses in 4(2).

Collaborative publications involving students from different departments are treated as sole authorship, with equal credits awarded to contributors. Surplus credits beyond the 4-credit limit are categorized as Add-on Credits and linked to Honours or Minor degree requirements.

Ethical practices must be upheld in all activities, and any shortcuts or unethical behaviour are strictly prohibited. A committee, chaired by the Head of the Department and comprising four

members— the School Dean, counsellor, one senior faculty member, and a representative from the Board of Research & Development (BoR)— shall oversee students' academic achievements to finalize and authorize credit transfer details and communicate them to the Office of Dean AAA.

6. SEMESTER-END ASSESSMENT ACTIVITIES

a) Setting of semester-end summative assessment question papers will be coordinated by the lead instructor assigned for a particular course. Two sets of question papers will be submitted latest by 12th week of the semester.

b) There shall be 'Summative Assessment Question Paper Scrutiny Committee' which would be constituted with external experts. Experts are empowered to modify / rephrase the questions to maintain a high standard of the semester-end assessment. The review should be completed by the 14th week of the semester. The review process will be coordinated by a committee of School Dean, HoDs and external experts.

c) The question wise marks scored in the summative assessment out of a total of 60 will be made available online within two weeks from the last date of examination and would be kept active for 24 hours. Latest by the end of 48 hours from the instant of notification any candidate can submit an appeal online providing question wise claim.

d) Claims for re-assessment on P-based courses are not allowed.

e) The appeals will be attended within next three working days. Fees for appeal, as decided from time to time, has to be remitted online along with the appeal.

f) Final results and grades will be computed as explained in the next section.

g) Final results and grades shall be announced within four weeks of completion of the last examination of the summative assessment (within two weeks from the last date of appeal). Grades are published on the University website, and also informed to the parents and students through SMS.

7. COMPUTATION OF GRADING

i. Candidates who have successfully completed the prescribed formative and summative assessment requirements shall be considered for grading. Candidates awarded an 'R' grade in formative assessment or an 'I' grade in summative assessment, as applicable, shall not be considered for the award of the regular course grade.

ii. The total marks obtained by a candidate in a course shall be computed as the sum of the marks secured in the formative and summative assessments, as prescribed for the respective course category. The total marks shall be considered out of 100.

iii. The Letter Grade and corresponding Grade Point shall be assigned based on the absolute marks secured by the candidate, as prescribed in Table 14. The grade awarded shall be independent of the performance of other students in the course.

Table 14: Grading Information.

Percentage of Marks	Category	Grade	Grade Points
90 and above	Outstanding	O	10
80 and above but <90	Excellent	S	9
70 and above but <80	Very good	A	8
60 and above but < 70	Good	B	7
50 and above but < 60	Fair	C	6
Less than 50	Incomplete	I	-
Transitional Grade	Repeat	R	-

8. SUPPLEMENTARY EXAMINATIONS

a) The supplementary examinations shall be conducted once in summer semester. Notifications will be released by the examination section informing the students about registration procedures, details of fee and timetables. Apart from these examinations the students who have courses with 'I'-grade can also write the supplementary examinations along with regular semester-end examinations of that academic (Odd / Even) semester.

b) Whenever a candidate clears courses with 'I' grade in a supplementary examination that are conducted during a regular semester, the Threshold value for computing his / her grade will be obtained from the same batch in which he / she had completed his/her formative assessment.

c) Whenever a candidate clears courses with 'R' / 'I' grade in a summer semester, the Threshold value for computing his / her grade will be carry forwarded from the preceding Odd / Even semester for the respective courses.

d) Whenever a candidate clears courses with a 'R' grade in a regular semester along with his/ her junior batch then for this candidate the Threshold value will be corresponding to his/her junior batch for computing grade.

e) The results of summative assessment of Project / Internship will be announced only if the candidate successfully earns all the credits in courses registered during the program. If the candidate is with 'R' / 'I' graded courses the results will be kept under

'Announced Later (L)' status and will be announced only after candidate clears these courses.

9. GRADE POINT AVERAGE

The Academic Performance of a student in every semester is indicated by the Semester Grade Point Average (SGPA) and finally by Cumulative Grade Point Average (CGPA).

9.1 SGPA

The Semester Grade Point Average (SGPA) shall be computed using the formula given below:

$$SGPA = \frac{\sum_{i=1}^{n} C_i P_i}{\sum_{i=1}^{n} C_i}$$

Where,

n = number of courses a student successfully completed in the semester under consideration

P_i = Grade points secured for the i^{th} course registered in the semester under consideration.

C_i = the number of credits assigned to i^{th} course registered in the semester under consideration

9.2 CGPA

The Cumulative Grade Point Average (CGPA) shall be computed after successful completion of the programme. The CGPA shall be expressed in different flavours to reflect B.Tech. of 160+10 credits, B.Tech. with Research Honours of 176 credits, and different Add-on provisions up to 16 credits leading to Minor / Add-on Diploma/ Add-on certification.

Accordingly, the computations will be as below:

$$\text{CGPA} = \frac{\sum_{j=1}^{m} C_j P_j}{\sum_{j=1}^{m} C_j}$$

Where,

m = total number of courses prescribed for the completion of the programme

P_j = grade points secured for the j^{th} course.

C_j = the number of credits assigned to j^{th} course

9.3 GRADE POINT PERCENTAGE EQUIVALENCE

Where Grade Point-based percentage equivalence is required, the percentage shall be calculated as:

Percentage equivalence = Grade Point × 9.5

10. AWARD OF CLASS

The students who have become eligible for award of degree shall be classified based on their CGPA secured, as per the Table 15:

Table 15: Class/ Division information.

Sl. No.	CGPA	Class / Division
1	8.0 and above	First Class with Distinction
2	6.5 and above but less than 8.0	First Class
3	6.0 and above but less than 6.5	Second Class
4	5.0 and above but less than 6.0	Pass class

a) For the purpose of rewarding the accomplishers with ranks and awards, toppers in each branch discipline are identified, based on their academic performance (CGPA).

b) In addition, the 'Chairman's Gold Medal' and other 'Endowment Awards' are awarded to the 'outstanding students' based on the overall performance which includes academic, co-curricular and extra-curricular activities, campus placements and competitive examinations. A committee appointed by the Vice-Chancellor will recommend the eligible student for the award, selected from the nominations received from the departments. In addition, the institution may recognize exceptional performance such as music, dance, sports etc. and display of exceptional bravery from time to time.

c) Only such candidates who complete 170+6+8 credits (+16 credits) in the first 8 successive semesters shall be eligible to receive awards/ ranks.

d) The candidates availing spill over semesters will not be eligible for the award of merit scholarships.

11. AWARD OF DEGREE

On successful completion of prescribed requirements of the programme, the degree shall be conferred during the convocation of the VFSTR.

For the conferment of degree, the student has to fulfil the following requirements:

a) a Bonafide student and undergone the course work of not less than four academic years and not more than seven academic years from the date of joining.

b) successfully completed all the courses as prescribed in the respective curriculum.

c) acquired a minimum eligible credit i.e. 170+6+8 credits for the award of B.Tech. degree.

d) obtained no due certificates as prescribed by VFSTR.

e) no in-disciplinary proceedings pending against him / her.

Consequent upon being convinced, following an enquiry, the Academic council may resolve to withdraw the degree / diploma / any other certification provided by the institute. The aggrieved may however prefer for a review of such decision by the Academic Council, citing cogent reasons for review or go in for an appeal to the, Executive Council of the institute.

12. LATERAL ENTRY AND LATERAL EXIT OPTIONS

12.1 Lateral Entry into II year of B.Tech.

The students who have completed their diploma programme in recognized institutes can be admitted into the third semester of the undergraduate programme. The committee constituted by Vice-Chancellor, will establish the eligibility of admission into different branches offered by VFSTR. The committee may recommend additional courses to be studied by the candidate, which students will complete during their first year of study at VFTSR however subject to a maximum of 25 credits per semester. To earn B.Tech. degree the student has to earn the same number of credits specified for regular B.Tech. in their 2^{nd}, 3^{rd} and 4^{th} year of study. The student is eligible to register for Add-on credits as presented in section (1.5).

12.2 Inter- Institutional Credit Transfer

Students pursuing an undergraduate programme in other recognized Higher Education Institute (HEI) could be admitted into VFSTR without appearing for the entrance exam to continue their studies, subject to the approval by a committee constituted by Vice-Chancellor. In this case, the student shall furnish the transcripts or grade cards, syllabus copies, educational certificates, and other relevant documents while applying for admission. The committee constituted by Vice-Chancellor, will establish the equivalency based on the marks / credits obtained in the courses in the previous institute by following the Inter- Institutional Credit Transfer policy.

12.3 Honourable exit with B.Sc. or Engineering Diploma

In line with NEP-2020, an optional exit is provided for a candidate who has earned a min. of 120 credits and has completed all the requirements up to the end of six semesters.

B.Sc. degree / Engineering Diploma will be awarded in respective branches of specialization. Candidates opted to exit with Engineering Diploma will also be awarded with B.Sc. equivalence certificate in case of disciplines existing in the University system.

In case the candidate fails to earn 120 credits, a suitable certification will be awarded during his / her exit from B.Tech. degree.

Semester-wise transcript and a consolidated transcript will be given to the candidates during their exit from the registered program.

Such a candidate who has exited can seek re-entry to complete B.Tech. by surrendering the B.Sc. Degree / Engineering Diploma. A committee constituted by Vice-Chancellor will scrutiny all such re-entry requests and recommend the plan of action. However, the max. duration of programme should be limited to seven years and further extension beyond the stipulated max. duration of study has to be approved by Academic Council, if the candidate appeals for an extension.

12.4 Volunteer 'Drop' with Sabbatical Semester option

A candidate may exercise his option to voluntarily exit from B.Tech. programme temporarily for a semester during the B.Tech. programme, by registering for a 'DROP option' in the beginning of the semester. The DROP can be exercised to take up special Internship / Innovation / Exploratory / Entrepreneurship / Advanced research / Start-up and such related activities. Under such circumstances a candidate can normally avail DROP over two successive semesters. Such 'Drop' semester will be identified as Sabbatical semesters.

Such a candidate has to pay the regular semester fee if such a Drop option is utilized during the first 8 semesters of B.Tech., and has to pay a nominal semester maintenance fee during the spill over period, if a candidate has not yet completed the credit requirements.

Upon returning from such a temporary exit, a candidate may continue his B.Tech. studies utilizing the provision of spill over period. A candidate may also submit a claim for Credit equivalence for the activities undertaken during the sabbatical period. The equivalence committee would evaluate and assess the academic equivalence of the work carried out and would recommend the credit equivalence and credit transfer to be granted together with the grades that could be attributed, if applicable. However, the max. duration of programme should be limited to seven years and further extension beyond the stipulated max. duration of study has to be approved by Academic Council, if the candidate appeals for an extension.

12.5 Volunteer 'Drop' with Semester Drop option

A candidate may exercise his option to voluntarily exit from B.Tech. programme temporarily for a semester during the B.Tech. programme, by registering for a 'DROP option' in the

beginning of the semester to meet the family / personal exigencies. All the norms as mentioned in the section (12.4) shall be applicable for the candidates utilizing semester drop option.

13. CHANGE OF BRANCH DISCIPLINE

The students can request for change of branch after completing the first two semesters of study. These requests are considered subject to the following conditions:

a) Top one percent of the students in each branch based on CGPA at the end of the second semester are eligible for a change of branch.
b) The seats must be available in the branch to which a student intends to change.
c) The student opting for a change should have completed all the credit requirements of the first two semesters.
d) The percentage of scholarship awarded at the time of admission may or may not be transferred in the case of a branch change and is subject to the availability of seats in the new branch.
e) The decision of the Institution is final in this regard.

All the above points are applicable for branch change cases based on the merit criterion. There may be branch change requests of another kind, from the students who are not able to cope up with the studies of the branch they are admitted into. All such requests are to be referred to a committee constituted for the purpose. The committee takes the decision based on the merit of each case, the availability of seats and various other factors. The decision of the committee in this regard is final. Because there may be a difference of one or two courses in the first-year curriculum among different specializations, when the student changes his specialization after completing first year, he / she is required to complete those first-year courses of the new specialization which were not studied by him/her during the first year, which can be taken up in the immediate summer semester.

14. MINIMUM REQUIREMENTS FOR PROMOTION TO THE NEXT SEMESTER

- In addition to the attendance requirement, a student shall earn a minimum of 50% of the credits in the academic year to be eligible to continue in the programme in the subsequent academic year. A student who fails to earn the required minimum credits shall be permitted to continue the programme only after obtaining the required number of credits.
- Students who fall under the 'R' Grade category may be considered for promotion to the subsequent semester on special request and subject to special consideration, provided that the student has maintained a minimum attendance of 50% in at least 50% of the courses offered during the semester. This provision is intended to enable students to attain the prerequisite knowledge required for undertaking subsequent courses. If a student fails to meet the prescribed minimum attendance requirement and has less than 50% attendance, he/she shall not be permitted to progress to the subsequent semester and shall be required to repeat the semester.

- The students detained due to non-fulfilment of the prescribed attendance and/or credit requirements shall be reviewed by a Special Committee constituted and chaired by the Vice-Chancellor, whose decision shall be final.

15. PROVISION FOR PURSUING TWO ACADEMIC PROGRAMS SIMULTANEOUSLY

In line with NEP-2020, R26 regulations at VFSTR allow B. Tech. students to enroll in two academic programs simultaneously without compromising the requirements of their primary degree. This provision is subject to UGC and AICTE approvals. It enables academically proficient students to pursue an additional degree, diploma, or certification while fulfilling the credit and course requirements of their B. Tech. curriculum. The regulations ensure scheduling flexibility and academic monitoring to help students effectively balance both programs. To maintain the academic integrity of the primary degree, students must meet the eligibility criteria specified in the regulations and demonstrate consistent performance. A candidate who desires to avail the benefit of pursuing two academic programs cannot register for Minors, Honours, or an Add-on Diploma. By utilizing this opportunity, students can gain interdisciplinary expertise, enhance their career prospects, and align their education with evolving industry and research demands.

16. INTERPRETATION OF RULES

a) The academic rules and regulations should be read as a whole for the purpose of any interpretation.

b) For the matter(s) NOT covered herein above or for unforeseen circumstances, but arising during the course of the implementation of the above regulations. The Vice-Chancellor shall be authorized to remove the difficulties and decide upon the matters. The same shall be reported in the next meeting of Academic Council for ratification and subsequently informed to Executive Council.

c) The Institution may change or amend the academic rules and regulations or curriculum at any time, and the changes or amendments made shall be applicable to all the students with effect from the dates, notified by the Institution.

d) Procedure and explanation to any section can be floated by the office of Dean AAA as applicable from time to time with due approval by the Chairman of Academic Council.

ANNEXURE – 1

SUPPLEMENTARY REGULATION FOR PURSUING B.TECH. UNDER ACCELERATED LEARNING PROGRAM

A candidate willing to complete the B.Tech. program within an accelerated timeline of three-and-a-half years should meet the following terms and conditions:

1. He/she should maintain a minimum CGPA of 8.5 up to the end of the 4th semester (II-year Even semester).
2. He/she should have successfully completed all credit requirements up to the end of the 4th semester without any 'R' or 'I' - grades.
3. The candidate should submit a formal application to the Office of the Dean AAA during the Module-2 period of III year – Odd semester (5th Semester) expressing intent to opt for the accelerated learning program.
4. The candidate should appear for an eligibility assessment (aptitude test/interaction) conducted by a committee of experts constituted for this purpose, and the committee must recommend his/her name for the program.
5. As per R26 regulations, each student must earn 3 credits under 'Work-in-Lieu of a Course'. Candidates must demonstrate their capability of earning these credits at the time of submitting their intent or during the interaction with the committee.
6. Selected candidates must register for an intensive summer semester between the 3rd and 4th year (i.e., after the 6th semester), during which they will complete courses originally scheduled for the 7th semester in the regular B.Tech. program. These courses include Professional Ethics (2 credits), two Department Electives (8 credits), and one Open Elective (3 credits), ensuring they meet the required credit load within the accelerated timeline.
7. The major project or internship originally planned for the 8th semester in the regular B.Tech. program will be shifted to the 7th semester in the accelerated program.
8. Students opting for the Accelerated Learning Program are discouraged from enrolling in add-on programs such as Honours and Minors to ensure they can effectively manage the intensive coursework and project requirements within the shorter duration.

Thus, a candidate should have successfully 170+6+8+16 earned credits within three and half of the year following the aforementioned procedure to qualify for a B.Tech. in YY Engineering under the Accelerated Learning Program.

NOTE: This Accelerated Learning Program is designed in line with the provisions of NEP-2020 but will be implemented only after the final approval and guidelines released by AICTE.

ANNEXURE -2

SUPPLEMENT REGULATION FOR PURSUING B.TECH. WITH RESEARCH HONOURS (SPECIALIZATION: XX)

A candidate willing to transform his / her B.Tech. programme into research orientation should meet the following terms and conditions.

1. He / she should register add-on credits for Honours specializing in a particular stream XX in his discipline of study.

2. He / she should have maintained a CGPA of 8.0 up to the end of 4th semester (II-year Even semester).

3. He / she should have successfully completed all the credit requirements up to the end of 4th semester.

4. He / she should indicate willingness to transfer his/her study from B.Tech. with Honours to B.Tech. with Research Honours during the Module-2 period of III year- Odd semester (5th Semester), when the applications are floated by the office of the Dean AAA for the purpose.

5. He / she has to appear for an aptitude test / interaction and the corresponding committee of experts constituted for the purpose has to recommend his / her name.

6. All recommended candidates may take up research project in a research lab / a research institution/ an institute of repute / a research organization or in the department of VFSTR.

7. All such candidates may compete for research internship support from the external research institutions or may be supported with research internship within VFSTR. This internship support will be for one full semester duration during his 8th semester extendable by one or two months during the summer semester that falls in the sequel to 8th semester, in which case the extended period will be treated as 8th semester itself.

8. Such candidates are normally expected to pursue research in the area of specialization chosen for B.Tech. with Honours study.

9. Such candidates should register for a course on Research Methodology in III year- II semester as Open elective-2.

10. Such candidates should have identified a broad research problem by the end of 6th semester, as a part of his / her Module-2 requirement in the course on Research Methodology (Open elective-2).

11. In the 7th semester (IV year- I semester) he / she has to take up Research preliminaries for his / her Honours- 4 credit requirements. This will be a research project work by itself in the broad area of the proposed research problem. The candidate shall be able to complete a good literature survey, execute basic / preliminary implementations and by the end of module-2 of Honours – 4, he / she should have identified the specific research problem on which he / she will take up research during 8th semester. The entire course (Honours - 4) will be evaluated as per the requirements of a project work.

12. The candidate takes up the intensive research work during IV year – II semester for 16 credits (which is combined project work of 12 credits and Honours-5 of 4 credits). He / she should spend a minimum duration of 5 months on the research work. If required, he / she will be considered for research internship period in the extended period also. In fact, he/ she may conserve time by starting the research work immediately after the completion of 7th semester.

Thus a candidate should have successfully earned 170+6+8+16 = 200 credits following the aforementioned procedure to qualify for B.Tech. in YY Engineering with Research Honours (Specialization: XX).

ANNEXURE -3

SUPPLEMENTARY REGULATION FOR YEAR-LONG PROJECT OR INDUSTRY INTERNSHIP

To encourage in-depth research and industry engagement, an opportunity for students to undertake either a full-year project or a year-long industry internship is provided in R26 regulations. By integrating this provision within the curriculum, students can gain hands-on experience, develop technical expertise, and enhance professional competencies while fulfilling academic requirements. This initiative is aligned with the institute's commitment to fostering research-driven learning and industry collaboration.

A candidate opting for a full-year project or a year-long industry internship must fulfill the following requirements:

1. The course structure for the first six semesters remains intact.
2. The candidate must not have any active 'R' or 'I' grades by the end of the 5th semester.
3. The candidate must provide documentary proof of earning 4 credits under 'Work-in-Lieu of a Course', as per R26 regulations.
4. A formal application must be submitted to the Office of the Dean (AAA) during Module-2 of the 6th semester, expressing intent to pursue the Yearlong Project or Industry Internship.
5. A committee constituted by honourable Vice-Chancellor will scrutiny all such applications and recommend the suitable candidates for approval
6. Students approved under this provision must register for a 13-credit project or internship in the 7th semester, while the major project or internship in the 8th semester will remain unchanged.
7. Departments may recommend equivalent credits (13 credits) for the 7th semester project or internship, aligning with the following academic categories:
    - Professional Ethics (2 credits): Assessed based on the student's ability to adhere to ethical standards, professionalism and responsibilities in the assigned work.
    - Department Electives (8 credits): Granted for domain-specific contributions and technical expertise demonstrated during the project or internship.
    - Open Electives (3 credits): Awarded based on project management, leadership, teamwork, and collaboration skills exhibited throughout the project duration.

This scheme is designed to bridge the gap between academic learning and practical application, enabling students to engage in advanced research or industry-driven projects. By integrating this framework, students will develop strong analytical, problem-solving, and professional skills, enhancing their career readiness and research potential. The structured evaluation ensures that students meet academic standards while gaining valuable industry exposure or research experience, ultimately contributing to their holistic development.