



**VINAYAKA MISSION'S
RESEARCH FOUNDATION**
(Deemed to be University under section 3 of the UGC Act 1956)

VINAYAKA MISSION'S RESEARCH FOUNDATION
(Deemed to be University under Section 3 of UGC Act, 1956), SALEM, INDIA

REGULATIONS 2021

(FOR THE STUDENTS ADMITTED FROM 2021-22 ONWARDS)

**BACHELOR OF ENGINEERING / TECHNOLOGY (BE/B.Tech.)
Full Time Degree Programme
Under**

FACULTY OF ENGINEERING AND TECHNOLOGY

REGULATIONS 2021

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INDIA

BACHELOR OF ENGINEERING / TECHNOLOGY (BE/B.Tech.)

Full Time Degree Programme

UNDER

FACULTY OF ENGINEERING AND TECHNOLOGY

REGULATIONS 2021

(FOR THE STUDENTS ADMITTED FROM 2021-22 ONWARDS)

In exercise of the powers conferred by the Revised Memorandum of Association rules of the Vinayaka Mission's Research Foundation Deemed to be University Salem, the Board of Management of the University hereby issues the following regulations pertaining to the undergraduate Programme and the award of the Degree of Bachelor of Engineering/Technology (BE / B.Tech.).

1. TITLE AND COMMENCEMENT

These regulations shall be called "**Bachelor of Engineering / Technology (BE/B.Tech.)-Full Time Degree Programme – Regulations 2021**". These regulations **come into force with effect from Academic year 2021-22** and modifications if any may be approved by the apex bodies of the University from time to time.

2. PREAMBLE

The Degree of Bachelor of Engineering/Technology (B.E/B.Tech.) in Faculty of Engineering and Technology shall be awarded to a candidate who, as per these regulations, has successfully undergone the programme, passed the prescribed examinations and thereby qualified to receive the degree.

3. DEFINITIONS AND NOMENCLATURE

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

3.1	AC	Academic Council, the highest academic body of the University, headed by the Vice Chancellor.
3.2	AB	Absent
3.3	AICTE	All India Council for Technical Education, New Delhi.
3.4	BE / B.Tech.	Bachelor of Engineering/Technology
3.5	BoM	Board of the Management- the highest governing body of the University.

3.6	BoS	Board of Studies of the University under the Faculty of Engineering and Technology.
3.7	Specialization	Discipline of BE/B.Tech. Degree Programme, such as Mechanical Engineering, Civil Engineering, Electronics and Communication Engineering etc.
3.8	CBCS	Choice Based Credit System
3.9	CO	Course Outcomes
3.10	CoE	Controller of Examinations of the University.
3.11	Course	Subject of study offered by various departments.
3.12	Credit	Course work measured in units, based on hours conducted/week and content of course. 01 hour lecture/tutorial and 02 hour practical per week is equivalent to 01 credit.
3.13	Curriculum and Syllabus	Courses studied in each Programme that provides appropriate knowledge in the chosen branch. The curriculum and syllabus for study is as prescribed by the Board of Studies (BoS) with the approval of the concerned Academic Council (AC) based on the UGC / AICTE regulations.
3.14	Dean	Dean for the Faculty of Engineering and Technology of the University.
3.15	EA	External Assessment
3.16	HoD	Head of the Department of the Institution.
3.17	HoI	Head of the Institution or Principal of the Constituent Engineering College of the University.
3.18	Institution	Constituent Engineering College of the University
3.19	IA	Internal Assessment
3.20	MoE	Ministry of Education
3.21	MOOCs	Massive Open Online Courses
3.22	NCC	National Cadet Corps
3.23	NPTEL	National Programme on Technology Enhanced Learning
3.24	NSS	National Service Scheme
3.25	OBE	Outcome Based Education
3.26	PO	Programme Outcomes
3.27	Programme	Under Graduate Programme leading to the award of Degree BE/B.Tech. approved by UGC, AICTE and the University
3.28	PSO	Programme Specific Outcomes
3.29	RRC	Red Ribbon Club of the Institution

3.30	RA	Reappear
3.31	SWAYAM	Study Webs of Active Learning for Young Aspiring Minds is a programme of the MHRD, Government of India.
3.32	Teacher	Professors, Associate Professors, Assistant Professors, Pro-term Lecturers and other persons engaged in teaching of the students and assisting the students in the conduct of studies and Research in the College/University
3.33	UGC	University Grants Commission
3.34	VMRF	Vinayaka Mission's Research Foundation Deemed to be University, Salem, Tamil Nadu, India
3.35	VC	Vice - Chancellor of the University
3.36	YRC	Youth Red Cross of the Institution

4. DURATION OF THE PROGRAMME

4.1 BE / B.Tech. – REGULAR (1st Semester Onwards)

The duration for the Bachelor of Engineering/Technology (BE / B.Tech.) regular degree Programmes is for **a period of 4 years (8 semesters) for the students admitted in first semester and not more than 8 years (16 semesters).**

4.2 BE/B.Tech. – REGULAR – LATERAL ENTRY (3rd Semester Onwards)

The duration for the Bachelor of Engineering/Technology (BE / B.Tech.) REGULAR DEGREE - **Lateral Entry Programme** is **over a period of 3 years (6 semesters) for the students admitted in third semester and not more than 6 years (12 semesters).**

4.3 The total duration for completion of the programme starts from the commencement of the first semester to which the student was admitted and shall not exceed the maximum duration specified. In compliance with the UGC norms, no student will be allowed to complete B.E/B.Tech in less than 8 semesters. The above mentioned time duration is counted excluding the semesters withdrawn on medical grounds etc.

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

5. MEDIUM OF INSTRUCTION

The medium of instruction for all academic activities is English, except for language courses other than English.

6. FEE STRUCTURE

The fee structure for the programmes shall be fixed by the committee constituted for this purpose by the University from time to time.

7. ADMISSION ELIGIBILITY

7.1 BE / B.Tech.(Full Time Regular) - All programmes – 04 Years Duration

The candidate seeking admission to the first semester of BE / B.Tech. Degree Programme should have passed 10+2 examination with Physics / Mathematics / Chemistry / Computer Science / Electronics / Information Technology / Biology / Informatics Practices / Biotechnology / Technical Vocational subject / Agriculture / Engineering Graphics / Business Studies / Entrepreneurship. (Any of the three) as per AICTE guidelines.

Obtained at least 45% marks (40% marks in case of candidates belonging to reserved category as approved by the Govt. of India) in the above subjects taken together.

OR

Passed min. 3 years Diploma examination with at least 45% marks (40% marks in case of candidates belonging to reserved category as approved by the Govt. of India) subject to vacancies in the First Year, in case the vacancies at lateral entry are exhausted. (The constituent colleges of the University will offer suitable bridge courses such as Mathematics, Physics, Engineering drawing, etc., for the students coming from diverse backgrounds to achieve desired learning outcomes of the programme.)

7.2 Lateral Entry Admission - BE / B.Tech. (Full Time) - All Programmes – 03 Years Duration

Passed Minimum three years / two years (Lateral Entry) Diploma examination with at least 45% marks (40% marks in case of candidates belonging to reserved category as approved by the Govt. of India) in any branch of engineering and technology.

OR

Passed B.Sc. Degree from a recognized University as defined by UGC, with at least 45% marks (40% marks in case of candidates belonging to reserved category as approved by the Govt. of India) and passed 10+2 examination with Mathematics as a subject.

OR

Passed D.Voc. Stream in the same or allied sector. (The constituent colleges of the University will offer suitable bridge courses such as Mathematics, Physics, Engineering drawing, etc., for the students coming from diverse backgrounds to achieve desired learning outcomes of the programme).

8. PROGRAMMES OFFERED

The programmes offered by the University in Faculty of Engineering and Technology are as mentioned below and are subjected to addition or removal of the programmes depending on the decision taken by subsequent BoS and further approval of Vice Chancellor.

PROGRAMMES OF STUDY – B.E. / B.Tech. DEGREE

S. No.	UG Degree	Programme
1.	B.Tech.	Biotechnology
2.	B.E.	Biomedical Engineering
3.	B.E.	Computer Science and Engineering
4.	B.E.	Civil Engineering
5.	B.E.	Electronics and Communication Engineering
6.	B.E.	Electrical and Electronics Engineering
7.	B.E.	Mechatronics
8.	B.E.	Mechanical Engineering
9.	B.E.	Pharmaceutical Engineering
10.	B.E.	Artificial Intelligence and Data Science
11.	B.E.	Computer Science and Engineering (Cyber Security)
12.	B.E.	Computer Science and Engineering (Artificial Intelligence and Machine Learning)
13.	B.E.	Computer Science and Engineering (Internet of Things and Cyber Security Including Block Chain Technology)
14.	B.E.	Computer Science and Design
15.	B.E.	Information and Technology
16.	B.E.	Medical Electronics Engineering

9. SELECTION OF STUDENTS

Guidelines issued from time to time for selection of students for admission in constituent colleges of the University are followed for admitting eligible students in various Under Graduate Programmes. Applications received are checked for completeness and a merit list based on the marks obtained in qualifying examination is prepared. The students are admitted as per the merit list.

10. REGISTRATION

A candidate admitted in the under graduate programme in the constituent engineering colleges of the University shall register with the University by remitting the prescribed fees along with the application form for registration duly filled in and forwarded to the University through the Head of the Institution within the stipulated date.

11. COMMENCEMENT OF THE PROGRAMME

The academic year for the programme shall commence in the month of July every year except first year. The first year classes shall commence in the month of August or as decided by the regulatory bodies and the University.

12. WORKING DAYS IN A SEMESTER

Each semester normally consists of **90 working days or 450 hours** inclusive of end semester theory & practical examinations and 75 teaching days.

13. MIGRATION

Migration / Transfer of students from any other engineering college or university other than VMRFDU to constituent colleges of the VMRFDU may be admissible on any genuine ground subject to the availability of vacancy in the college where migration is sought and fulfilling the requirements of the University. The eligibility criteria and credit transfer of completed course as decided by the equivalence committee constituted for this purpose shall be applicable for such students.

14. BREAK OF STUDY

Two semesters or One Year break of study may be allowed in the entire duration of the course for genuine reasons beyond the control of the student like natural calamity, serious health problems etc. For a maximum continuous duration of 2 semester's break of study alone will be admissible. If a student is declared not eligible for appearing in examination for lack of minimum attendance percentage or due to any misconduct, the period spent in that semester will not be considered as Break of Study. Details about Break of study will be intimated to the CoE office before the registration for end semester examination through HoI.

During the break of study, a student:

- a. Cannot attend any regular classes.
- b. Will not be permitted to stay in the Hostel.
- c. Will not be permitted to participate in any of the Institution's activities inside the campus.

- d. Can reappear for the ‘End Semester Final Examination’ for courses in which he/she might have obtained ‘U’ grade.

15. READMISSION

A student who undergoes a break in studies in the current semester (odd/even) can get readmitted only in the subsequent corresponding (odd/even) semester in the next academic year only. The Candidate who re-joins after the break shall be governed by the rules and regulations in force at the time of re-joining. The Vice – Chancellor is vested with the power to permit the break or discontinuation and re-joining the course for which the candidate must apply in the prescribed form duly recommended by HoD and HoI with mapping of the courses already passed before discontinuation and to be passed in the forthcoming semester along with necessary supporting documents.

16. PROGRAMME STRUCTURE

The structure of curriculum related to each Programme complying with the Choice Based Credit System (CBCS) and Outcome Based Education (OBE) framework shall be submitted to the Academic Council for approval based on the recommendation of boards for different Programmes.

Each Programme shall have a curriculum in accordance with OBE framework comprising of Theory, Theory cum Practical and Practical courses and syllabus designed as per Blooms’ Taxonomy Level for the achievement of POs as stated in **Annexure I** and PSOs.

Definition of Credit:

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

16.1 Range of credits – Respective boards will decide for a **credit of 160 for a student** to be eligible to get awarded with Under Graduate degree in Engineering.

STRUCTURE OF UNDERGRADUATE ENGINEERING PROGRAM – REGULAR STUDENTS

Sl. No.	Category of Courses	Types of Courses	Suggested Breakup of Credits
1.	A. Foundation Courses	Humanities and Social Sciences including Management courses	9-12
2.		Basic Science courses including Environmental Sciences	18-25
3.		Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc.	18-24
4.	B. Professional	Core courses	48-54

5.	C. Elective Courses	Professional Electives		12
		Industry Designed/ Industry Supported/ Industry Offered/ Industry Sponsored courses		6
		Open Electives	Innovation, Entrepreneurship, Skill Development etc.	6-9
			Emerging Areas like 3D Printing, Artificial Intelligence, Internet of Things etc.	6-9
6.	D. Courses for Presentation of technical Skills related to the specialization	Project work		8
		Mini Project		3
		Seminar		1
		Internship in industry or elsewhere		3
7.	**E. Mandatory Courses	Indian Constitution, Essence of Indian Traditional Knowledge, Employability Enhancement; Yoga and Practice/NCC/NSS/RRC/YRC/ Sports and Games, Rotaract club, Student Clubs, Unnat Bharat Abhiyan and Swachh Bharat.		Zero credit (Minimum 2 courses to be completed other than yoga and Practice)
Minimum Credits to be earned				160

STRUCTURE OF UNDERGRADUATE ENGINEERING PROGRAM – LATERAL ENTRY STUDENTS

Sl. No.	Category of Courses	Types of Courses	Suggested Breakup of Credits	
1.	A. Foundation Courses	Humanities and Social Sciences including Management courses	3 – 6	
2.		Basic Science and Engineering courses	3 – 9	
3.	B. Professional	Core courses	48-54	
4.	C. Elective Courses	Professional Electives		12
		Industry Designed/ Industry Supported/ Industry Offered/ Industry Sponsored Courses		6
		Open Electives	Innovation, Entrepreneurship, Skill Development etc.	6-9
			Emerging Areas like 3D Printing, Artificial Intelligence, Internet of Things etc.	6-9
5.	D.	Project work		8
		Mini Project		3

	Courses for Presentation of technical Skills related to the specialization	Seminar	<u>1</u>
		Internship in industry or elsewhere	3
6.	**E. Mandatory Courses	Indian Constitution, Essence of Indian Traditional Knowledge, Employability Enhancement; Yoga and Practice/NCC/NSS/RRC/YRC/Rotaract club, Sports and Games, Student Clubs, Unnat Bharat Abhiyan and Swachh Bharat.	Zero Credit Course (Minimum 2 courses to be completed)
Minimum Credits to be earned			120

17. Components of Curriculum

17.1 Category A - Foundation Courses (FC)

The courses in this category belong to Humanities and Social Sciences including Management courses, Basic Science courses, Gender sensitization related courses, Design courses and Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc.

Universal Human Values (UHV) is a course covered on the basis of recommendation of AICTE which is a 3 credit course and should be offered to the students as decided by the respective boards. The credits earned in this category will be used for overall CGPA calculation.

17.2 Category B –Professional Core Courses

The courses related to the programme are called core courses and the same has to be selected by the students in every semester in consultation and guidance of their mentor / faculty advisor. A student may also opt for core courses offered through MOOCs (Massive Open Online Courses), SWAYAM, NPTEL etc. and the credits earned after successful completion of the courses will be recommended by HoI for transfer of credits and endorsement in marks statement. The credits earned in this category will be used for overall CGPA calculation.

17.3 Category C - Elective Courses (EC)

17.3.1 Professional Elective courses relevant to chosen specialization

Programme specific professional electives are courses which are not offered under professional core courses. These courses may not have any prerequisites and can be chosen as and when required by the students. A student may also opt for programme specific professional elective courses offered through MOOCs

(Massive Open Online Courses), SWAYAM, NPTEL etc. and the credits earned after successful completion of the courses will be recommended by HoI for transfer of credits and endorsement in marks statement. The credits earned in this category will be used for overall CGPA calculation.

17.3.2 Industry Designed/ Industry Supported/ Industry Offered/ Industry Sponsored courses

Courses which are designed/supported/offered/sponsored by the industries and are included in curriculum through Board of Studies are coming under this category. Generally, these courses are meant to equip the students with necessary theoretical as well as practical skills related to the requirements of industries for placement on completion of degree programme.

17.3.3 Open Electives

17.3.3.1 Courses on Innovation and Entrepreneurship

Courses offered in this category include courses related to innovation, entrepreneurship, skill development, startups, Intellectual Property Rights (IPR) etc.

17.3.3.2 Courses on Emerging Areas (Multi-Disciplinary)

The courses offered in this category include courses on emerging areas which are multi-disciplinary in nature like 3D Printing, Artificial Intelligence, Internet of Things etc. University may offer multi-disciplinary open elective courses which will be offered to all students of the university irrespective of the discipline he/she belongs. e.g. Students from Faculty of Engineering and Technology can take courses offered by the Faculty of Medicines, Faculty of Allied Health Sciences, Faculty of Pharmacy etc. and vice-versa.

These courses do not have any prerequisite condition and can be chosen as and when desired by the students. A student may also opt for open elective courses offered through MOOCs (Massive Open Online Courses), SWAYAM, NPTEL etc. and the credits earned after successful completion of the courses will be recommended by HoI for credit transfer and endorsement in marks statement. The credits earned in this category will be used for overall CGPA calculation.

17.4 Category D –Courses for Presentation of Technical Skills related to the specialization

17.4.1 Project Work

The student must represent his earned knowledge in the engineering programme by doing a quality project in his/her last semester of the programme of study. This project work should be done under the regular

guidance of faculty supervisor. In case of an industry sponsored project, a co-supervisor from the industry will also be involved and there should be a regular interaction between the student and supervisor and the proceedings should be recorded periodically. Once in a month the student must report to the faculty supervisor with attendance report from co-supervisor and present progress and latest status of his/her project with the help of a Power Point presentation in the presence of HoD. The progress and presentations in the semesters will be used for internal evaluation and allocating internal assessment marks and end semester examination will be used for external assessment marks. The credits earned in this category will be used for overall CGPA calculation.

17.4.2 Mini – Project

Preferably in the 2nd last semester, the students must involve in a mini-project which will provide sufficient preliminary exposures including industrial applications for developing skills in handling engineering projects and also to build strong foundation on theoretical i.e. literature review and methodology to be adopted to do his/her final semester project. The procedure adopted for evaluation of this mini-project will be same as mentioned for final semester project. The students should be encouraged to do industry sponsored project.

17.4.3 Seminar

The student has to present his technical knowledge gained in his/her specialization using Power point presentations on various topics. In order to develop research aptitude, the student may also be encouraged to read and understand research papers published in indexed journals, patents applied etc. and present in front of a committee constituted by HoD for evaluation and assessment. The student should also be encouraged to publish technical papers in National as well as in International conferences and in indexed journals. Record of presentations should be maintained by the faculty in-charge. In a semester, minimum 03 presentations have to be organized and internal assessment marks will be awarded on the basis of performance in best 02 (two) of the 03 (three) presentations and external assessment marks will be awarded on the basis of performance in final 4th presentation to be done during end semester practical examinations. The credits earned in this category will be used for overall CGPA calculation.

17.4.4 INTERNSHIP

In order to equip students with necessary hands-on skills along with theoretical knowledge and to provide sufficient exposure in real time applications, it

is mandatory for every student to undergo internship / industrial training in any industry/ organization. Internship on rural/Social community services, innovation, incubation, IPR, entrepreneurship etc. will also be considered towards awarding credit under this category. Students are allowed to pursue Internships, after the completion of their third semester University examination onwards, Minimum three weeks but not exceeding 8 weeks of Internship / Industrial training / Industrial engagement will be considered as eligible for awarding credits in this category. Students should submit the offer letter received from the Industry/Organization providing Internship, along with self-declaration, to the Principal for approval through proper channel in the prescribed proforma. If the student feels that the Internship work is not meeting the standards/not related to their field of interest, then he/she should submit the application to the department within 5 days from the date of joining and can re-join the Institute.

The Internship may be cancelled / discontinued at any time if the performance of the intern is not found satisfactory or the intern is The Industry offering Internship will have to be verified by the Institution's Placement and Training cell. This shall be submitted at least one month prior to the commencement of the respective semester, in which he/she is proceeding for Internship. The candidate should also submit a synopsis of the proposed work to be done during the Internship programme. While doing Internship, the candidate should secure a minimum 90% attendance. Industry/Educational Organization shall submit the attendance report of the students to the head of the respective department. After completion of Internship, students are required to submit the report of work done along with the certificate of completion. The Department Internship coordinator shall verify the eligibility conditions, attendance records; academic records, progress reports, Internship certificate and stipend proof of such students undergoing Internship (if applicable) and submit to authorities concerned for further processing absent without the authorization of the Internship supervisor / College. The credits earned in this category will be used for overall CGPA calculation. HoD on recommendation of the committee constituted for evaluation will be submitting the evaluation scores to the COE office through the HoI. The final semester project in industry / research organization will not be considered as industrial training / internship for earning credits in this category.

17.5 Category E –Mandatory Non-Credit Courses

The courses under this category do not have any credit and will not be added for CGPA calculations. The courses like Indian Constitution, Essence of Indian

Traditional Knowledge, Gender Equity and law, NSS/NCC etc. are included under this category. Minimum two courses have to be completed by the student in his/her study of the programme besides Yoga and Meditation which is a compulsory course and is to be completed during first year (First/Second semester).

17.5.1 Student Clubs: Interested students may enrol themselves in Institutional social responsibility Programmes such as NSS (National Service Scheme), NCC, Student Clubs like RRC (Red Ribbon Club), Rotaract Club, Science Club, Fine Arts Club etc., YRC (Youth Red Cross), Sports and Games, Unnat Bharat Abhiyan, Swachh Bharat, Mahatma Gandhi National Council of Rural Education (MGNCRE) etc.

17.5.2 Sports and Games: Physical activities are necessary not only for physical health and fitness but are also required for having a sound mind. Though physical activities i.e. sports, games, yoga and meditation form a mandatory part of student induction program, the students should be encouraged to continue the same not only in first semester but also in other semesters. In order to ensure active involvement of students and staff, several competitive events and tournaments related to sports and games should be organised by the institution. Participation at University, State and National levels will be given special recognition.

18. BLENDED MODE OF LEARNING AND ADOPTION OF SWAYAM COURSES

Students are allowed to take a maximum of 40% of the total number of minimum number of credits to be earned as per the curriculum, which are offered through MOOCs like NPTEL/SWAYAM. The credits earned should be transferred in mark sheet on successful completion of the courses and recommendations by the equivalence committee constituted for this purpose. The credits earned for the courses in curriculum completed through MOOCs like NPTEL/SWAYAM will be used for overall CGPA calculation. The student should secure at least 50% Score/ Marks in the MOOC course. This will be the minimum eligibility for credit transfer. Scores of the MOOC courses completed by the students on permitted platforms are valid till 1 year

Over and above the curriculum, the students if interested can take any number of courses offered through MOOCs like NPTEL/SWAYAM. Credits earned on successful completion of the courses greater than 40% of the total credits will not be transferred in mark sheet and will not be used for overall CGPA calculation.

19. CHANGE OF PROGRAMME

In order to provide flexibility in selection of programme as per choice and interest even after admission to a particular programme, the student may opt for change of programme of study to another programme before the commencement of III semester on recommendation by the equivalence committee with proper mapping of the courses studied and with the approval of the Head of the Institution. Any such modifications need to be intimated immediately to the University.

However if a student applies for readmission along with a request for change of branch in a higher semester, this may be permitted as per Clause 15 and adopting the following process.

1. The Equivalency Committee will review the courses already completed by the student and recommends the credit to be earned in the new branch.

2. The student may take as many semesters as required as per Clause 4.1 to earn those credits as per Clause 20.1.2.

20. COURSE REGISTRATION IN A SEMESTER

20.1 REGISTRATION OF COURSES

20.1.1 Registration Process: The students will register courses to be studied in a semester (Even/Odd) in their department in first week of commencement of semester or whenever it is asked for. The selection of courses should satisfy the minimum credit requirement for each category of courses. This may also be discussed during first class committee meeting in presence of Mentor and allotted Mentee. Faculty advisor of the class may also assist in planning and selection of the courses for registration in the semester.

20.1.2 Minimum and maximum credits: In a semester, a student can register new courses for minimum 14 credits and maximum 30 credits for regular as well as online classes (in case of blended mode of learning) except in final semester. Registration of courses will not include courses registered in NPTEL/ SWAYAM.

The criteria for registration of courses for minimum 14 credits will not be applicable for those students who are having less than 14 credits to be earned for awarding of degree. In such cases, the students will be allowed to register for the remaining courses for less than 14 credits. The limit of Maximum 30 credits will not include courses of reappearance i.e. courses could not be completed successfully in previous semesters. The students can register any number of courses for reappearance.

20.1.3 Dropping of registered course: The students are at liberty to drop the course of reappearance and can choose a new course. The student has to attend the classes of the new course and has to satisfy the requirement of internal as well as external assessment.

20.1.4 Compensatory Courses: The system of compensatory courses is meant only for those students who are unable to cope up with the academic vigour and hence fails to secure 75% attendance in 1 or 2 courses in a semester. But if they have an attendance of

75% and above in more than 3 courses but fails to meet the attendance requirement in other courses, students can register those courses under Compensatory Courses in the forthcoming semesters subject to the following conditions:

- a) Compensatory courses are conducted only for a student who is 'Detained from Study' due to lack of attendance of 75% minimum.
- b) Compensatory courses may be announced after the publication of results, by the respective Department, by the HODs, with the approval of the Principal.
- c) Student has to register for the Compensatory Course and pay the prescribed fee for the Compensatory Courses within the specified time limit. A maximum of two Compensatory Courses alone will be permitted to be registered by a student during the semester next to the semester of detainment.
- d) Withdrawal from Compensatory courses is not permitted.
- e) These Compensatory courses will be held either during weekends or in evenings after the regular class duration.
- f) A student has to obtain a minimum of 75% attendance in each of these courses.
- g) A student has to score the minimum passing criterion to be declared 'Pass' in that course.
- h) Students cannot demand a compensatory course for a course in any semester as a matter of right. Compensatory courses will be conducted subject to availability of faculty, class rooms and logistics.
- i) Students who have done a Compensatory Course will not be considered for rank, medal or distinction.

21. ASSESSMENT

21.1 Learning Assessment Procedure

All assessments are designed based on Revised Bloom's Taxonomy levels of thinking and learning. The learning of a student is assessed and evaluated twice in an academic year at the end of odd /even semester respectively, and shall have learning assessments from the following perspectives with respect to all courses:

- (a) Evaluation with respect to knowledge.
- (b) Evaluation with respect to Understanding.
- (c) Evaluation with respect to skill.
- (d) Evaluation with respect to Applications.
- (e) Higher Order Thinking Skills Registration for end-semester final examination for all courses enrolled in that semester is mandatory.

The student's learning in each course, in general, is assessed (formative) and evaluated (summative) based on in-semester continuous learning assessment (Internal assessment) and end-semester final examination.

21.2 Internal Assessment

60% weightage of the total marks will be used for Internal Assessment (IA) of the students by the faculty in charge / Course handler in theory as well as practical courses. An in-semester continuous learning assessment (also known as internal assessment test) is spread through the duration of course and is done by the faculty member facilitating the course. The internal assessment marks will be calculated based on the following guidelines.

S. No.	Description	Marks
01	Internal Assessment Test -01&02 and Model exam(10 marks each)	30
02	Seminar/Technical Quiz	20
03	Assignment/Project	10
Total Marks		60

21.3 External Assessment

40% weightage of the total marks will be used for External Assessment (EA) of the students and it will be mandatory for the student to appear in the exam. The examination may be conducted Online/Offline depending on the prevailing situation.

21.4 Eligibility for End semester Examinations

The student maintaining minimum 75% attendance percentage in each course will only be eligible for appearing in end semester examinations. If a student does not have a minimum of 75 % attendance in at least 3 or more courses in the previous semester, he will not be allowed to enrol for current semester and has to undergo a year of break in studies. In exceptional emergency cases, HoI may permit the students with attendance percentage 65% and above but below 75% to appear in the tests/examinations with condonation fee as decided by the fee fixation committee of the university.

Those students who have not deemed to have completed the semester due to lack of attendance, shall repeat that semester in the next academic year by following the readmission/re-join procedure.

22. PASSING REQUIREMENTS – THEORY AND PRACTICAL COURSES

A candidate securing not less than 50% of total marks (Internal Assessment (IA) + External Assessment (EA)) prescribed for the course in both theory and practical courses will be declared to have passed the Examination. A minimum a 40% need to be scored in both IA and EA for passing.

For lab embedded theory courses, student should compulsorily appear for both theory and practical Examination. He / She has to secure a minimum of 40% in both IA and EA and a total of 50% (IA+EA) in (Theory and practical) individually to pass in the lab embedded theory courses, failing which he/she needs to reappear for the entire course (both Theory and Practical).

23. ELIGIBILITY FOR AWARD OF DEGREE

A student shall be declared to be eligible for the award of the BE / B.Tech. Degree if she has

- a) Registered and successfully completed the courses and has earned the minimum credit requirements for the respective engineering programme.
- b) Successfully acquired the required learning credits as specified in the curriculum corresponding to the branch of his/her study within the stipulated time duration.
- c) No disciplinary action is pending against him/her.

24. SPECIALIZATION IN BE / B.Tech. DEGREE PROGRAMME

If a student earns 15 credits in program specific specialization electives and fulfilling the minimum requirement of credits for the award of the BE / B.Tech. Degree, he / she shall be awarded with an additional certificate of recognition for SPECIALIZATION. For example, BE / B.Tech. in parent discipline Mechanical Engineering with an additional certificate for Specialization in “Renewable Sources of Energy”. These credits can also be earned through MOOCs.

25. HONOURS IN BE / B.Tech. DEGREE PROGRAMME

A student is eligible to register for Honours only if he/she has a CGPA greater than or equal to 8.50 at the end of the 4th semester. It is not mandatory for any student to opt for honours / minor program. Choice is given to the individual student to undertake honours / minors programs from Vth Semester to VIIIth Semester in his/her parent discipline by paying the prescribed fee.

The student will be awarded with BE / B.Tech. degree in parent discipline with HONOURS, only if he / she satisfies the following criteria.

1. He / She secures an additional 20 credits in the programme specific electives over and above the minimum requirements of credits for the award of the BE / B.Tech. Degree. The

additional courses may include laboratory courses and MOOC courses.

2. He / She pass all the courses in first attempt.
3. He / She secure a CGPA greater than or equal to 8.50 at the end of the 8th Semester.

Credits earned through registration and successful completion of honours / Minor programme will not be considered for the calculation of CGPA.

26. MINOR IN BE / B.Tech. DEGREE PROGRAMME

If a student earns 18-20 extra credits over and above the minimum requirements of credits for the award of BE/ B.Tech. Degree, he / she shall be awarded BE / B.Tech Degree in parent discipline with MINOR in other discipline. These credits can also be earned through MOOCs. An additional Certificate of Recognition will be issued by University along with the Degree Certificate. For example, BE / B.Tech. in Mechanical Engineering and a certificate for Minor in Electronics and Communication Engineering. The guidelines pertaining to offering of Minor degree programmes are given in annexure 4.

27. CLASSIFICATION OF PERFORMANCE

Classification of performance of students in the examinations pertaining to the courses in a programme is done on the basis of numerical value of Cumulative Grade Point Average (CGPA). The concept of CGPA is based on Marks, Credits, Grade and Grade points assigned.

27.1 Mapping of Marks to Grades

Each course (Theory/Practical) is to be assigned 100 Marks, irrespective of the number of credits, and the mapping of marks to grades may be done as given in the following table.

Assigned Grade	Grade Points (GP)	Range of Marks
O++	10	95-100
O+	9.5	90-94
O	9	85-89
A++	8.5	80-84
A+	8	70-79
A	7	60-69
B+	6	55-59
B	5.5	51-54
C	5	40-50
U	ABSENT (Failure due to nonappearance in examination)	
	REAPPEAR (Failure due to insufficient marks in the course)	

27.2 Semester Grade Point Average (SGPA)

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

$$SGPA = \frac{\sum(C_i * G_i)}{\sum C_i}$$

Where C_i is the credit for a course in that semester and G_i is the Grade Point earned by the student for that course. The SGPA is rounded off to two decimal numbers and calculated on all courses appeared including courses in which 'RA' grade is obtained.

27.3 Cumulative Grade Point Average (CGPA)

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

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

28. CLASSIFICATION OF SUCCESSFUL CANDIDATES FOR AWARD OF DEGREE

28.1 First class with Distinction

28.1.1 A student who qualifies for the award of degree and passed the examination in all registered courses in his / her first appearance within four years for students admitted in first year or three years for lateral entry students and securing a CGPA of not less than 8.00 shall be declared to have passed in First class with distinction.

28.1.2 A student who qualifies for the award of degree and passed the examination in all registered courses in his / her first appearance within five years for students admitted in first year and four Years for lateral entry students including the authorized Break of Study of one year and securing a CGPA of not less than 8.00 shall be declared to have passed in First class with distinction.

28.2 First Class

28.2.1 A student who qualifies for the award of degree and passed the examination in all registered courses within four years for students admitted in first year or three years for lateral entry student's and securing a CGPA of not less than 6.5 shall be declared to have passed in First class.

28.2.2 A student who qualifies for the award of degree and passed the examination in all registered courses within five years for students admitted in first year and four Years

for lateral entry students including the authorized Break of Study of one year and securing a CGPA of not less than 6.5 shall be declared to have passed in First class.

28.3 Second Class

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

29. RANKING

Students obtaining top 3 positions in CGPA ranking in a Programme at the university level will be considered as a rank holder. They should have passed all the prescribed courses in the first appearance and should have obtained a CGPA of 8.0 and above. The student should also have a clean record of discipline during the period of study. Special certificates will be given to rank holders.

30. MODIFICATIONS OF REGULATIONS

These regulations are subject to modifications from time to time as per the decisions of the apex bodies of the University.

ANNEXURE 1
PROGRAMME OUTCOMES (POs)

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

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

ANNEXURE 2
GUIDELINES FOR INTERNSHIP

- a) Students are allowed to pursue Internships, after the completion of their third semester University examination onwards. The internship has to be meaningful and beneficial to the intern.
- b) The period of Internship shall be at least three weeks but not exceeding 8 weeks (4 to 8 weeks) as per the regulations 2021. A student has to earn 3 credits as per the regulations.
- c) Students should undergo Internships only during their summer or winter vacation approved by the Principal, Vice Principal (Academics) and the Head of respective Department (HoD).
- d) Students should submit the offer letter received from the Industry/Organization providing Internship, along with the declaration by the student, to the Principal for approval through proper channel in the prescribed proforma. The Industry offering Internship will have to be verified by the Institution's Placement and Training cell. This shall be submitted at least one month prior to the commencement of the respective semester, in which he/she is proceeding for Internship. The candidate should also submit a synopsis of the proposed work to be done during the Internship programme.
- e) Students on joining Internships at the concerned Industry/Organization, shall submit the Joining Report/Letters/Email to the Head of Department.
- f) Each student is required to keep an Internship diary, to mark the periodic update of the Project work, observations, information gathered, and suggestions given, if any.
- g) Students should contact their Faculty Advisor, on a weekly basis, to communicate the progress and they need to submit the weekly report through E-mail.
- h) While doing Internship, the candidate should secure a minimum 90% attendance. Industry/Educational Organization shall submit the attendance report of the students to the head of the respective department.
- i) After completion of Internship, students are required to submit
 - i. Report of work done. The Internship report should be signed by the Internship supervisor/ Project Manager/authority concerned.
 - ii. Copy of Internship certificate.
 - iii. Evaluation form by the industry in the prescribed format.
 - iv. Stipend proof (Bank transaction statement) if any.
- j) The Department Internship coordinator shall verify the eligibility conditions, attendance records; academic records, progress reports, Internship certificate and stipend proof of such students undergoing Internship (if applicable) and submit to authorities concerned for further processing.
- k) If the student feels that the Internship work is not meeting the standards/not related to their field of interest, then he/she should submit the application to the department within 5 days from the date of joining and can re-join the Institute.
- l) The Internship may be cancelled / discontinued at any time if the performance of the intern is not found satisfactory or the intern is absent without the authorization of the Internship supervisor / College.

ANNEXURE 3

STANDARD OPERATING PROCEDURE FOR TRANSFER OF CREDITS

As per clause 17 of regulations 2021 of the Faculty of Engineering and Technology, a student may opt for courses offered through MOOC platform SWAYAM NPTEL and the credits earned after successful completion of the courses will be recommended by Transfer of Credit Committee for transfer of credits and endorsement in marks statement. The grades earned in this category will be used for the calculation of CGPA.

As per clause 18 of regulations 2021 of the Faculty of Engineering and Technology, Students are encouraged to take a maximum of 40% of the total number of credits in the curriculum through SWAYAM NPTEL.

Over and above 40 % of the credits, the students if interested can take any number of courses offered through various MOOC platform like NPTEL/SWAYAM and credits earned on successful completion of these courses will not be transferred in mark sheet and will not be used for overall CGPA calculation.

Guidelines for Credit Transfer

1. Students cannot register for the mapped MOOC courses that are being offered in the current semester.
2. The student should secure at least 50% Score/ Marks in the MOOC course. This will be the minimum eligibility for credit transfer.
3. Scores of the MOOC courses completed by the students on permitted platforms are valid till 1 year.

PROCEDURE FOR TRANSFER OF CREDITS

1. Each department should recommend the MOOC courses with at least 60% mapping with VMRF syllabus. The list of courses should be recommended by the department coordinator and HoD. The list should be submitted to the Transfer of Credit Committee (TOC).
2. TOC committee will approve the list of courses recommended by the department.
3. The student should enroll for the courses only from the approved list.
4. After successful completion of the MOOC course, the student should apply for the credit transfer using **CREDIT TRANSFER APPLICATION FORM** along with the MOOC course completion certificate through proper channel to the Transfer of Credit Committee.
5. Transfer of Credit Committee (TOC) will consolidate all the applications received from the departments and validate them. The committee will submit the list to the Controller of Examination, VMRF for further action.
6. The Grade for the completed MOOC course will be awarded as per VMRF regulations.

ANNEXURE 4

GUIDELINES FOR OFFERING MINOR DEGREE PROGRAMMES

Minor degree programmes are offered with a view to enhance the employability skills and impart deep knowledge in emerging areas which are usually not being covered in Undergraduate Degree credit framework. Minor Degree will carry 18 to 20 credits in addition to the credits essential for obtaining the Under Graduate Degree in Major Discipline (i.e. 160 credits). These additional credits shall be acquired through the list of courses for a Minor Degree prescribed by the respective departments. On successful accumulation of these additional credits, at the time of graduation, it shall be mentioned in the degree certificate as "Bachelor of Engineering in XXX Engineering / Technology, with Minor in YYY Engineering / Technology".

Eligibility Criteria

A student will be permitted to pursue a Minor, if and only if, he / she fulfils the following criteria:

- i. Must have secured a minimum of 7.5 CGPA at the time of admission to a Minor
- ii. There must NOT be any standing arrears / Backlogs.
- iii. Must be in the active rolls of the department without any break of study or disciplinary action pending against the student

Rules and Regulations

1. Minors must be completed simultaneously with a major degree program. A student cannot earn a minor after he /she has earned the bachelor's degree.
2. Atleast one active major is required in order to pursue a minor.
3. The Certification for Minor will NOT be issued until the Major degree is successfully completed, even though all requirements for the Minor have been satisfied.
4. All requirements for the Minor must be completed within a maximum of ONE semester of the completion of the Major degree but NOT LATER THAN the maximum duration of study of the Major degree permitted.
5. If a student drops from a Minor or is NOT able to fulfill all the requirements for the certification of Minor, within the maximum period of study, the student will NOT be issued the Certification. Nevertheless, the transcripts for the completed courses will be issued.
6. Courses offered for a Certification in Minor will be treated on par with the regular courses of a Major in respect of attendance requirements, assessment and examination requirements.

Registration for minor degree programmes

1. The number of seats for minor in any Engineering branches is limited and subject to availability and academic performance.
2. The student should register for a Minor any time after 4th Semester of B.E degree programme.
3. The offering Department scrutinizes the credentials of registered students and announces the list of selected students who fulfill the minimum eligibility criteria for admission into a Minor Certificate programme.
4. The selected students enroll into the Minor Certificate programme by paying a one-time programme fee as prescribed by the University.

5. The student is permitted to register for a maximum of 2 courses per semester, over and above the maximum credits permitted for a Major degree of study.
6. A student can choose a minor degree programme based on his/her major degree programme of study as detailed below:

Sl. No.	Minor Degree	To be offered as Honours only for following major disciplines (For any other Major Disciplines which is not mentioned it may be offered as Minor degree)
1.	AI and ML	CSE; ECE
2.	Data Science	CSE; ECE
3.	Internet of Things (IOT)	CSE; ECE
4.	Smart Cities	Civil Engineering; ECE
5.	3D Printing	Civil Engineering; Mechanical Engineering
6.	Electric Vehicles	EEE; Mechanical Engineering
7.	Precision Health Technology	Biotechnology
8.	Nanotechnology	Applicable to any branch of Engineering
9.	Drug Engineering	Pharmaceutical Engineering; Biotechnology
10.	Universal Human Values	Applicable to any branch of Engineering