

**ACADEMIC REGULATIONS
OF
MASTER OF TECHNOLOGY
PROGRAMME
UNDER
FACULTY OF TECHNOLOGY &
ENGINEERING**

ACADEMIC REGULATIONS FOR POST GRADUATE DEGREE (M.TECH.) PROGRAMMES UNDER FACULTY OF TECHNOLOGY AND ENGINEERING:

SHORT TITLE, APPLICATION AND COMMENCEMENT:

- a) These regulations shall be called as Academic Regulations for M.Tech. programmes under The Faculty of Technology & Engineering.
- b) They shall apply to all students admitted in M.Tech. programmes under The Faculty of Technology & Engineering, Nirma University.
- c) They shall come into force from the date of their publication of the notification with the approval of Board of Governors, Nirma University.

DEFINITIONS: IN THESE REGULATIONS, UNLESS THE CONTEXT OTHERWISE REQUIRES:

Programme	- It is a postgraduate degree programme
Course	- A constituent subject of the programme
Semester/Term	- Duration for studying a course/s i.e. a portion of an academic year. The word "Term" is generally used synonymously with "Semester".
Registration	- Procedure to register a course/s in a semester for the purpose of study or appearance in examination.
Letter Grade	- A letter associated with a particular performance level of a student in a course. A qualitative meaning and numerical figures are attached to each grade.
Credit	- A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to one hour of teaching (lecture or tutorial) or two hours of practical work/field work per week. On passing a course, a student will earn this "credit".
Appeal Committee	- A Committee consisting of Director, Head of the Department and two senior faculty members nominated by the Director.

SHORT FORMS:

The Institute	- The Institute of Technology
The Director	- The Director, Institute of Technology
Faculty	- Faculty of Technology & Engineering
The Dean	- The Dean, Faculty of Technology & Engineering
CEE	- Continuous Evaluation Examination



PWE	- Practical Work Examination
SEE	- Semester End Examination
SPE	- Supplementary Examination
IR	- Initial Registration
RR	- Repeat Registration
RS	- Repeat Registration for Studying all components of a course
RRE	- Repeat Registration Examination
RRC	- Repeat Registration for Examination of continuous evaluation component of a course
RRP	Repeat Registration for Examination of Practical/Lab work of a course
RRS	- Repeat Registration for Semester End Examination of a course
GPA	- Grade Point Average
SGPA	- Semester Grade Point Average
PGPA	- Programme Grade Point Average
CGPA	- Cumulative Grade Point Average
R.ENG(PG)	- Regulation of Technology & Engineering (Postgraduate Programme)

R.ENG(PG) 1: THE PROGRAMMES

The Postgraduate Degree Programmes in Technology & Engineering leading to the Master of Technology (M.Tech.) Degrees offered by the Institute of Technology, Nirma University under the Faculty of Technology & Engineering. The programmes are full time and of two-year duration. The medium of instruction of the programmes is English (**Annexure-I**).

R.ENG(PG) 2: ELIGIBILITY CRITERIA AND DETERMINATION OF MERIT FOR ADMISSION

The Eligibility criteria and determination of merit for the admission in the First Year of Master of Technology programme under the Faculty of Technology & Engineering, Nirma University shall be as per **Annexure-II**.

R.ENG(PG) 3: CATEGORIES OF COURSES

The following categories of courses are offered in the programme which are also part of major and minor.

3.1 Core Courses:

The courses to be compulsorily studied by the students as a core requirement to complete the academic requirement of a programme as prescribed by the Academic Council.



3.2 Elective courses:

Elective course is a course which can be chosen from a pool of Courses. It may be:

- Supportive to the discipline of study
- Providing an expanded scope
- Enabling an exposure to some other discipline/domain
- Nurturing student's proficiency/skill

An elective may be "Generic Elective" focusing on those courses which add generic proficiency to the students. An elective may be "Discipline centric" which may include the elective offered for major and minor or may be chosen from another discipline.

3.3 Dissertation:

A candidate studies such a course with an advisory support by a teacher/expert in the concerned field is called dissertation it may be offered as a core course or elective course depending upon the Teaching and Examination scheme approved by the Academic Council from time to time.

3.4 Project(s)/Internship(s):

All students will have to complete project(s)/internship(s) with a social or an industrial or business or service or a foreign organization for a duration as prescribed in the Teaching and Examination Scheme with an objective to provide professional learning experience that offers meaningful practical work related to a student's field of study or career interest or any field.

3.5 Value Added Courses:

They are offered to the students to provide an additional exposure to certain skills/knowledge. This is a Non-credit course. The Dean of the Faculty is empowered to decide these courses, their curriculum, teaching and examination schemes, passing standards, etc. in accordance with the value-added course policy approved by the Academic Council and from the list of courses approved by the Academic Council.

3.6 Audit Courses:

These are optional courses. Audit courses are not evaluated for the purpose of assessing the academic performance of the students and no grade will be awarded for these courses.



3.7 Vocational Course:

Vocational courses are career/job-oriented courses prepares learners for jobs that are based in manual or practical activities. These courses are traditionally non-academic and totally related to a specific trade, occupation or vocation.

R.ENG(PG) 4: COMPONENTS OF A COURSE

The academic schedule of the courses may consist of one or more of the following components with their respective scope as described.

4.1 Lecture:

Teaching learning sessions conducted through real and virtual classrooms with various multimedia aids and other forms of students learning engagements as per requirement of the course and approved by the Dean.

4.2 Tutorials:

Supplementary to classroom teaching tutorials are conducted as per Nirma University Tutorial Policy and as amended from time to time.

4.3 Project Work / Practical Work/ Studio/Workshop/Field work:

The students will be engaged in research or Practical Work pertaining to a course.

R.ENG(PG) 5: CO-ORDINATORS

5.1 Course Coordinator (to be nominated by the Dean for each course)

To coordinate all matters related to the conduct and assessment of a course.

5.2 Examination Co-ordinator (to be nominated by the Dean)

To look after all matters regarding Registrations and Re-registrations of courses and also to provide guidance and counselling to students regarding these issues.

R.ENG(PG) 6: TEACHING AND EXAMINATION SCHEME

6.1 Teaching Scheme:

The scheme of teaching in a semester as a whole will be referred as Teaching and Examination Scheme.



The schemes show the various courses, distribution of teaching hours, course component/s, examination components and their weightages and credits allotted to each course.

The courses offered in each programme (Semester wise) and their teaching schemes are given in the Semester Schedules approved by the Academic Council from time to time on recommendation of Faculty of Technology & Engineering.

6.2 Examination Scheme:

For assessment of a course, a student is assessed on following components:

- a) Continuous Evaluation Examination (CEE) - that includes several sub-components such as Quiz/Test, Assignment, comprehensive Viva, and Project (Group/ individual), etc. All exercise in CEE will be continuously assessed during the semester and given marks.
- b) Practical Work Examination (PWE) – that includes several subcomponents as per the practical work policy of institute of Technology. All assignments in practical work will be continuously/ periodically assessed (as applicable) during the semester.
- c) Semester End Examination (SEE) which will be conducted at the end of the semester/term. The SEE covers the entire syllabus of the course.

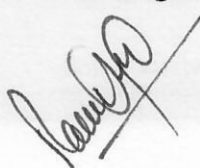
The course in each programme (semester-wise) and their examination scheme along with the teaching scheme are given in the Semester Schedules approved by the Academic Council from time to time on recommendation of Faculty of Technology & Engineering.

The assessment of sub-components of courses for CEE & PWE differ depending upon the nature and the teaching scheme of the concerned course. The detailed assessment scheme of the CEE, PWE and SEE for each course will be finalized and notified in form of course outline by the Dean in accordance with the assessment policy approved by the Academic Council.

R.ENG(PG) 7: REGISTRATION IN COURSES

Registration:

There are two categories of registration, Initial Registration (IR) and Repeat Registration (RR). All categories of registration will collectively be referred to simply as Registration. Registration will be done for each course. All Registration, wherever applicable, will be subject to the availability of courses. Students' registration in a Semester will be in chronological order.



Categories of Registration:

7.1 Initial Registration (IR):

In order to study a course for the first time, the student will register under the IR category. This will imply regular attendance for study of all components of that course and appearing at all examinations thereof. IR registration for courses of a Semester are to be done for all courses of that Semester as shown in the Teaching Scheme. Generally, IR registration will not be permitted for lesser number of courses. The student who so registers (IR) for all courses of a Semester will be considered as having been registered in that Semester.

7.2 Repeat Registration (RR):

Repeat registration is consisting of following categories of registrations;

7.2.1 Repeat Registration for Study of a course (RS):

This category will imply regular attendance (as per R.ENG(PG) 8) to study all components (i.e. LT, CE, PW as applicable) and appearing at all examinations thereof. The student has to seek fresh registration for this category and will be subject to the availability of the course/s.

7.2.2 Repeat Registration for Examination (RRE):

This registration is necessary for appearing again in a particular examination of a course. It will not involve regular attendance for studying the course.

Repeat Registration for Examination will be in the following categories:

- (a) Repeat Registration for the Examinations of Continuous Evaluation component of a course (RRC)
- (b) Repeat Registration for the Examination of Practical /Lab Work (RRP)
- (c) Repeat Registration for Semester End Examination of a course (RRS).

7.3 Approval of Registration:

Every student must apply in the prescribed format for registrations, as applicable. The decision on the student's request will be based on the availability of courses and applicable Regulations. The Dean will issue appropriate orders for processing the application, including scrutiny, verification and final orders.



R.ENG(PG) 8: ATTENDANCE REQUIREMENT FOR APPEARANCE AT SEMESTER END EXAMINATION

A student has to comply with the following condition course wise to be eligible to admit for SEE:

8.1 Attendance:

Students under category of (IR, RS) should have at least 85% attendance, including Academic Leave in all teaching components of the course (as applicable).

8.2 Appeal Committee:

A student who has not met with attendance requirement of any course may appeal to the Appeal Committee giving full reasons for his/her default. The decision of the Committee in all such cases will be final. The student will be allowed to appear in the examination of the course only if the appeal committee condones the deficiency.

If the committee rejects the appeal of the student, then the student will not be permitted to appear in SEE of the concerned course. Accordingly, S/he will also be given grade F in that course and S/he will have to seek RS category registration.

R.ENG(PG) 9: SCOPE OF EXAMINATIONS AND ASSESSMENT

The scope of examinations and the method of assessment are as follows:

9.1 Continuous Evaluation Examination (IR & RR Registration):

The learning of the students will be continuously assessed during the Semester and given marks. The total marks of components of continuous evaluation will be aggregated based on their *inter se* weights to give the overall percentage of marks in the CEE examination.

If a student fails in CEE, the student will not be permitted to appear in SEE of that course and the student will have to seek RRC.

9.2 PW Examination (IR and RR Registration):

All assignments of a course in Practical Work will be continuously / periodically assessed (as applicable) during a semester. Each assessment will be given marks. The total marks of all Units of PW will be aggregated based on their *inter se* weights to give the overall percentage of marks in the PW examination. The course coordinator will notify the procedure for assessment, review, viva voce, etc. to the students in advance.



If the student fails in PW examination, the student will not be permitted to appear in SEE of that course and the student will have to seek registration as RRP in subsequent semester.

9.3 Semester End Examination (IR & RR Registration):

The expression 'Semester End Examination' refers to the Hall Examination of a course taken at the end of a Semester. The SEE of a course will cover the entire syllabus of the course. The assessment will be mark based.

If the course coordinator desires that there should be an open book examination in a course in any SEE, S/he may make a suitable recommendation to the Department/Programme Head. Final approval of the Dean will be necessary before the scheme is implemented. This method of examination must be announced to the students through the Course Outline before the commencement of the respective course.

9.4 Supplementary Examination (SPE):

(RR registration, grade F in SEE)

The Institute may decide to hold a Supplementary Examination (SPE) for SEEs at the end of each semester for students who have failed in SEE or who wish to improve the performance of SEE, such students will have to seek RR registration to take up SPE.

9.5 Schedules of SEE and SPE:


SEEs of all courses of the programme, as per the teaching scheme, will be held at the end of each semester. The date of the Supplementary Examinations (SPE) will be held generally after 15 days from the date of result declaration of SEE and will be for only those courses that are offered in that semester.

9.6 Absence in SE examination with or without Regular Approval will be assigned Zero [0] marks and appropriate grade will be given to the student. However, they will be permitted to appear in the Supplementary Examination.

R.ENG(PG) 10: ASSESSMENT AND ROLES OF EXAMINERS

10.1 CE & PW:

The Course Coordinator in consultation with the faculty teaching in a course proposes the CE & PW components and their inter se weightage to the respective Head of Departments. The Dean takes the final decision for the same in consultation with the Departmental Head and the same be notified to the students



before commencement of the course. Normally the faculty teaching a course/ component shall be the examiner for assessing the CE & PW components of the course.

10.2 Semester End Examination:

Normally the examiners for assessment of SEE shall be appointed as per the guidelines and examinations rules of Nirma University. There will be a minimum of two examiners in a course and both the examiners are individually responsible for assessment work allotted to them. The assessment shall be carried out after the meeting of examiners to discuss and finalize the Marking Scheme and the methods of evaluation, which will be duly minuted for further reference.

10.3 Maintenance of the assessed material of the SEE:

The examination section of the University shall maintain the assessed material of the semester/trimester end examination for one year.

10.4 Timeliness of Result Announcement:

It is essential to maintain the timeliness of all components of assessments, both formative and summative. In any case, the faculty should not take more than one week to declare any result of the formative assessment and normally not more than 7 days to submit the assessment of the Semester End Examination to the university examination section.

10.5 Declaration of final results:

The university shall announce the course grades of every semester/trimester within 10 days from the date of completion of the Semester End Examination. In case of failure to do so, the reasons for non-completion of results will be informed to the Director General.

10.6 Review of the question papers of SEE:

The Internal Quality Assurance Cell (IQAC) shall ensure that the review of the question papers should be completed within 30 days of the completion of the Semester End Examination.

The Head of the Institute shall form a departmental or Institute level committee consisting of three senior faculty members to review the quality of the question papers for the semester end examination. The report of the same shall be submitted to the Head of the Institute within 30 days of the completion of the said examination.

The Policy on Assurance of Learning [notified by Nirma University] shall be referred and accordingly, parameters of review of the quality of the question papers of SEE shall be carried out. The summary report of this review shall be placed before the Board of Studies of the concerned department for discussion and further improvements.



10.7 Audit of Course Assessments:

To enhance the quality of assessment, an audit of the assessment of a course of any one of the divisions in a semester shall be conducted in each programme covered under the policy. The course will be selected by the concerned Dean in consultation with the department head. The Institute shall develop a suitable mechanism to audit the same and report to the Director General through University IQAC.

R.ENG(PG) 11: GRADE AND PERFORMANCE LEVELS

The overall Academic Performance level of a student in any course will be adjudged in terms of the letter grades, and grade points. Table-1 provides significance of letter grades along with its equivalent grade points.

11.1 Absolute Grading:

The University follows the absolute grading shall be followed except in the situation and courses where relative grading is the programme-specific requirement as per the concerned statutory regulating body.

11.2 Course Grade:

Course grade will be given only when the student meets with the academic standards of passing of all components of a course.

Marks of SEE, CEE and PWE (as applicable) examinations shall first be aggregated on the basis of the component / *inter se* weights given in the Teaching Scheme. The overall percentage of marks, if fractional, will be rounded off to the next higher integer. After the aggregate marks of a student is calculated, the performance of each student in the course as a whole will be assigned a grade using the below conversion table.

Table No. 1 Conversion of Marks into Course Grades

Overall Percentage (%) of Marks obtained	Letter Grade	Qualitative Meaning	Grade Point
91 and above	O	Outstanding	10
81 to 90	A+	Excellent	9
71 to 80	A	Very good	8
61 to 70	B+	Good	7
51 to 60	B	Above average	6
46 to 50	C	Average	5
40 to 45	P	Pass	4
Below 40	F	Fail	0
Absent	Ab	Absent	0

The Grade Report/Transcript will show only the Course Grade and not the marks.



R.ENG(PG) 12: PERFORMANCE LEVELS

The performance level of a student in credit courses at different stages of the study in a programme is assessed by the following measures.

12.1 Course Grade Point:

The numerical value (Grade Point) corresponding to the letter grade obtained in a course by a student.

12.2 Semester Grade Point Average (SGPA) :

The Grade point Average (GPA) is computed from course grades as a measure of student performance in the courses. SGPA is based on the grades of all courses scheduled under a semester and it is the ratio of the sum of the product of the number of credits with the corresponding grade points scored by a student in each course and the sum of the credits of all the courses undergone by a student.

$$\text{SGPA (Si)} = \frac{\sum(C_i \times G_i)}{\sum C_i}$$

where C_i is the number of credits of the i th course and G_i is the grade point scored by the student in the i th course of the semester.

12.3 Cumulative Grade Point Average (CGPA) & Programme Grade Point Average (PGPA) :

The SGPA is based on the grades in all courses taken in a semester, while the CGPA is based on the grades in all courses taken after joining the programme of study at any point of study of a programme. The CGPA computed on completion of a programme based on the grades of all the credit courses of the programme is termed as Programme Grade Point Average (PGPA).

$$\text{CGPA} = \frac{\sum(C_i \times G_i)}{\sum C_i}$$

where C_i is the number of credits of the i th course, G_i is the grade point of the i th course at any point of study of the programme.

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.



12.4 Equivalent Percentage (%) Marks for CGPA:

In case an equivalence between GPA values and percentage of marks is desired, the same can be obtained as given below:

Equivalence % of marks = CGPA value x 10

R.ENG(PG) 13: PASSING STANDARDS

13.1 Component-Wise Minimum Passing:

A Student is required to meet component-wise minimum marks for passing a course. The requirement of minimum marks in Continuous Assessment (CE & PW) as well as End Semester Examination is 40%. A student is permitted to appear for the Semester End Examination only after he/she meets the requirement of passing in the Continuous Assessment Component.

13.2 The standard for passing a course:

The minimum standard for passing a course as whole is “**Grade P**”.

13.3 Academic Standard for Successful Completion of a Semester:

For successful completion of a semester a student is required to earn a minimum SGPA of 5.00 besides he/she is required to pass all courses of semester.

R.ENG(PG) 14: FAILURE

14.1 Failure of components of course:

A student not satisfying the academic standard for Passing any of the course components shall be awarded course Grade ‘F’.

14.2 Scope for improvement:

Student fails in a component of a course is permitted to register (RR) for improvement during end of the following semester besides the opportunity to improve the SEE component by taking supplementary examination at the end of the same semester.

Similarly, the students are also permitted to register (RR) for improvement of passed courses with a Course Grade of ‘C’ or below.



Mark obtained in the improvement examination under RR category shall be considered for computation of final course grade even if the mark obtained is less than the previous examination.

As per the availability of the course, examinations will be conducted specifically for the student who wishes to improve the result or along with other students appearing in examination under Initial Registration (IR).

R.ENG. (PG) 15: ACADEMIC BREAK:

A student will be allowed to take the break up to one academic year during the programme due to medical reason or any other justifiable reason subject to approval of the Director General on the recommendation of the Dean. The decision of Director General for consideration or rejection of such request shall be final. If the student considered for Academic break, then following conditions shall apply:

- a) The student shall not be entitled for award of Medal,
- b) The student has to complete the study within the admissible duration to complete the programme,
- c) Payment of all applicable fees.

R.ENG(PG) 16: ACADEMIC PROGRESSION RULE

In order to successfully complete a semester a student is required to meet the academic standard as per Regulation R.ENG(PG)13.3. However, a student be allowed to promote to the next higher semester even if he/she has not met with the all requirements subjects to certain conditions.

16.1 Failure in Course:

A student will be allowed to register for the courses of the next higher semester even if he/she has not meet with the minimum academic standard to pass all the courses of the semester subject to the condition that he/she has backlog in not more than 3 credit courses.

If a student fails to meet with the above condition will not be permitted to register for respective higher semester. Such students will repeat sufficient number of courses as ex-student and meet with the requirement of the promotion criteria.

16.2 Failure to meet the Academic requirement of the Semester:

Similarly, a student will be allowed to register for the higher semester even if S/he fails to meet with the minimum academic requirement for successful completion of a semester subject to the condition that the requirement of the 1st semester should



be met, by the end of 3rd semester. If a student fails to meet with the above condition will not be permitted to register for respective higher semester. Such students will repeat sufficient number of courses as ex-student and meet with the requirement of the promotion criteria. Such students can also appeal to the Appeal Committee for grant of opportunity to be promoted to the next higher semester, provided that the student gives a viable assurance to make-up the short fall within a semester. The decision of the Appeal Committee will be final in this regard.

R.ENG(PG) 17: AWARD OF DEGREE

To qualify for the award of Master of Technology degree a student requires:

- a) PGPA 5.0
- b) successfully complete the prescribed credits of the programme as specified in the Teaching and Examination Scheme
- c) successfully complete Value-added courses(s) as notified by the Dean in the Teaching and Examination Scheme with a minimum grade 'satisfactory, failing to which, s/he is required to improve the Value-added courses(s) grade in the scheme as prescribed by the Dean, Faculty of Technology & Engineering

R.ENG(PG) 18: CANCELLATION OF ADMISSION

The admission of following categories of students is liable to be cancelled:

- a) Failure to meet the academic requirements for the award of post graduate degree within (2+1) years from the date of admission to the programme.
- b) The student, whose admission is so cancelled, can appeal to the Appeal Committee. The Committee may grant an extension up to the TWO additional Semester/s for the deserving cases, provided the student gives a viable assurance to make up the shortfall within that period.

Note:

Notwithstanding anything contained above, if a student has cleared all the courses and have earned the requisite number of credits except one course, may appeal to the President. The President may consider such appeal on the recommendation of the appeal committee prescribed under the regulations for the purpose and after considering the genuineness of the case may give ONE more additional attempt to the student concerned to clear the remaining course.



**Nirma University
Institute of Technology**

Annexure – I

R.ENG. (PG)-1: THE PROGRAMMES

1. M.Tech. in Civil Engg. (Computer Aided Structural Analysis & Design)
2. M.Tech. in Civil Engineering (Geomatics)
3. M.Tech. in Chemical Engg. (Environmental Process Design)
4. M.Tech. in Chemical Engineering (Chemical Process & Plant Design)
5. M.Tech. in Electrical Engg. (Power Electronics, Machines & Drives)
6. M.Tech. in Electrical Engineering (Electrical Power Systems)
7. M.Tech. in Electronics & Communication Engg. (VLSI Design)
8. M.Tech. in Electronics & Communication Engineering (Communication Engineering)
9. M.Tech. in Mechanical Engineering (CAD/CAM)
10. M.Tech. in Mechanical Engineering (Thermal Engineering)
11. M.Tech. in Mechanical Engineering (Design Engineering)
12. M.Tech. in Mechanical Engineering (Computer Integrated Manufacturing)
13. M.Tech. in Computer Science & Engineering
14. M.Tech. in Computer Science & Engineering (Networking Technologies)
15. M.Tech. in Instrumentation & Control Engineering (Control & Automation)
16. M.Tech. in Computer Science & Engineering (Information and Network Security)
17. M.Tech. in Electronics & Communication Engineering (Embedded System)
18. M.Tech. in Mechanical Engineering (Energy System)
19. M.Tech. in Electrical Engineering (Energy System)
20. M.Tech. in Chemical Engineering (Energy System)
21. M.Tech. in Computer Science and Engineering (Data Science)
22. M.Tech. in Computer Science and Engineering (Cyber Security)
23. M.Tech. in Electrical Engineering (Electric Vehicular Technology)
24. M.Tech. in Civil Engineering (Construction Technology and Management)



**Nirma University
Institute of Technology**

Annexure – II

**R.ENG. (PG)-2: ELIGIBILITY CRITERIA AND DETERMINATION OF MERIT
FOR ADMISSION_**

A student seeking admission to any Programme must fulfil the following criteria:

He should have passed the qualifying examination of Bachelor of Engineering/Bachelor of Technology from a recognized university with minimum % of marks as prescribed by the AICTE from time to time or equivalent cumulative grade point index.

He should have passed any other qualifying degree/diploma examination considered as equivalent by Nirma University **with** minimum % of marks as prescribed by the AICTE from time to time or equivalent CPI.

DETERMINATION OF MERITS FOR THE ADMISSION:

The method of determining the merit for the admission will be decided by the Director General, Nirma University from time to time depending upon the requirement.

