SHIVAJI UNIVERSITY, KOLHAPUR
Department of Technology
<u>Rules and Regulations for</u>
<u>M.TECH. Courses</u>

Preamble:

> **What is a credit system?**

A credit system is a systematic way of describing an educational programme by attaching credits to its components. The definition of credits in higher education systems may be based on different parameters, such as student workload, learning outcomes and contact hours.

> **Advantages of the Credit System**

- Represents a much-required shift in focus from teacher-centric to learner-centric education since the workload estimated is based on the investment of time in learning, not in teaching.

- Helps to record course work and to document learner workload realistically since all activities are taken into account - not only the time learners spend in lectures or seminars but also the time they need for individual learning and the preparation of examinations etc.

- Segments learning experience into calibrated units, which can be accumulated in order to gain an academic award.

- Helps self-paced learning. Learners may undertake as many credits as they can cope with without having to repeat all the courses in a given semester if they fail in one or more courses. Alternatively, they can choose other courses and continue their studies.

- Affords more flexibility to the learners allowing them to choose inter-disciplinary courses, change majors, programmes, etc.

- Respects 'Learner Autonomy'. Allows learners to choose according to their own learning needs, interests and aptitudes.

- Makes education more broad-based. One can take credits by combining unique combinations. For example, if a learner is studying music, he/she can also simultaneously take a course in Business Management.

- Facilitates Learner Mobility. Offers the opportunity to study at different times and in different places. Credits earned at one institution can be transferred to another.

- Helps in working out twinning programmes.

- Is beneficial for achieving more transparency and compatibility between different educational structures.

- A credit system can facilitate recognition procedures as well as access to higher education for non-traditional learners.

➢ Some Key Terms
- **Program:**

A Program is a set of courses that are linked together in an academically meaningful way and generally ends with the award of a Certificate or Diploma or Degree depending on the level of knowledge attained and the total duration of study. For example, Certificate in office Computing, Diploma in Journalism, BA and BSc , etc. would be called 'Programs' at the Certificate, Diploma and Degree level respectively. Over the years, most universities have been using the term 'Course' to indicate what is meant here by 'Program'. In **order to use common nomenclature, therefore, let us refer to BA, B.Sc and B.Com, B.E./M.E, B.Tech/M.Tech as Programs, not Courses.**

- **Course:**

A 'course' in simple terms corresponds to the word 'subject' used in many universities. A course is essentially a constituent of a 'program' and may be conceived of as a composite of several learning topics taken from a certain knowledge domain, at a certain level. All the learning topics included in a course must necessarily have academic coherence, that is, there must be a common thread linking the various components of a course. A number of linked courses considered together are in practice, a 'program. For instance,

1. 'Compulsory Power Electronics', 'Micocontroller', ' Micro-Electronics', etc. included under the B.Tech/M.Tech Electronics program would be called 'Courses'

2. Mechanical,Civil,Electrical, Electronics,Computer. included under the B.Tech/MTech. Programme would be called 'Courses' for single major Engineering in respective branches.

- **Module and Unit:**

A course which is generally an independent entity having its own separate identity, is also often referred to as a 'Module' in today's parlance, especially when we refer to a 'modular curricular structure'. A module may be studied in conjunction with other learning modules or studied independently. While it is a common practice to treat a single course as an independent module, there are instances where in a single '**Unit**' or a Topic within a course is treated as a Module. For instance,
- One Topic in a course on 'Compulsory English' could be 'Reading Skills'. Such a topic would be called a 'Unit'. If this Unit can operate as a single separate entity, it may be called a 'Module'.

- One Topic in a course on 'Mathematics' could be 'Double integral'. Such a topic would be called a 'Unit'. If this Unit can operate as a single separate entity, it may be called a 'Module'.

- One paper in mathematics will be called one course. Thus in Mathematics at FYBSC level (Semester I and semester II) paper I will be called one module. Every paper in each subject under science faculty will be separate entity and hence it is a course. Structuring the entire curriculum of a program in terms of independent modules helps to provide a lot of flexibility and choice for the learner. He/She can then work out his own combination of courses as per his/her own inclinations.

- **Credit Point:**

This has a reference to the 'Workload' of a learner and is an index of the number of learning hours deemed for a certain segment of learning. These learning hours may include a variety of learning activities like reading, reflecting, discussing, attending lectures / counseling sessions, watching especially prepared videos, writing assignments, preparing for examinations, etc.. Generally, a system of assigning Credit Points (CP) for a single course is practiced in most countries across the globe. Credits assigned for a single course always pay attention to how many hours it would take for an average learner to complete a single course successfully. The fallacy of assigning credits to a course purely based on how many lectures (teaching hours) are conducted for a learner at a certain level needs to be avoided. Although there is no hard and fast rule regarding how many credit points a single course should have, by and large a course may be assigned anywhere between 2 to 8 credit points wherein **1 credit is construed as corresponding to approximately 30 to 40 learning hours.**

- **Credit completion and Credit accumulation:**

Each module of an academic program that has been assigned specific credit points also has a certain scheme of learner evaluation as well as certain specific criteria defining successful completion. Credit completion or Credit acquisition may be considered to take place after the learner has successfully cleared all the evaluation criteria with respect to a single course. Thus, a learner who successfully completes a 4 CP (Credit Point) course may be considered to have collected or acquired 4 credits. His level of performance above the minimum prescribed level (viz. grades / marks obtained) has no bearing on the number of credits collected or acquired. A learner keeps on adding more and more credits as he completes successfully more and more courses. Thus he 'accumulates' course wise credits.

- **Credit Bank:**

The process of accumulating Credits over a period of time, leads to the idea of a 'Credit Bank'. Conceptually, a Credit Bank in simple terms refers to stored and dynamically updated information regarding the number of Credits obtained by any given learner along with details regarding the course/s for which Credit has been given, the course-level, nature, etc. In addition, all the information regarding the number of Credits transferred to different programs or credit exemptions given may also be stored with the individual's history. In short, like a regular Bank, this would involve maintaining all the Credit–related transactions of an individual. Credit Banking, when practiced would go a long way in facilitating credit transfers and learner mobility.

- **Credit Transfer:**

Apart from maintaining an account of credits acquired by a learner over a period of time for a wide range of courses, the main idea behind implementing the credit system is to make provision for learner mobility. Credit Transfer means that credits earned at one institution for one or more courses under a given program are accepted under another program either by the same institution or another institution. In practice this means that it is accepted that a certain chunk of learning has already been successfully completed by a learner. This acceptance of earlier acquired credits may be reflected in one of two ways:
　(i) Direct Performance Transfer **or** (ii) Course exemption.

- **Performance transfer:**

When a learner who has successfully completed a certain academic program, is allowed to transfer his past performance to another academic program having some common courses,

performance transfer is said to have taken place. In such cases, the grades or marks obtained by the learner in the common courses of the earlier completed program are reflected unchanged in the new program. Thus for example, if two academic programs have 3 common courses, the grades (or marks) in each of them would be reflected in the same way when considering the new academic program. .

- **Course exemption**:

Occasionally, two academic programs offered by a single university or by more than one university may have some common or equivalent course-content. The learner who has already completed one of these academic programs is then allowed to skip these 'equivalent' courses when registering for the new program. He is then 'exempted' from 're-learning' the common or equivalent content area and from re-appearing for the concerned examinations. It is thus taken for granted that the learner has already collected in the past the credits corresponding to the exempted courses.

➢ What is Grading?

The word Grade is derived from the Latin word *gradus,* meaning, step. Grading, in the educational context is a method of reporting the result of a learner's performance subsequent to his evaluation. It involves a set of alphabets which are clearly defined and designated and uniformly understood by all the stake holders. A properly introduced grading system not only provides for a comparison of the learners' performance but it also indicates the quality of performance with respect to the amount of efforts put in and the amount of knowledge acquired at the end of the course by the learners.

- **Encumbrances to Evaluations Reforms**

The issues related to examination and evaluations do not have any state or national boundaries, but are global in nature. It is accepted by all the stakeholders that our educational system is examination ridden. The declaration of examination results with award of marks and class has become of paramount importance for all the stakeholders in the system. In many cases, once the results are out, there is no scope for improvement in marks or performance improvement. This results in a lot of students being deprived from further opportunities. In spite of the repeated regulations and reminders from the UGC and similar continuous follow up from the state government to implement some reforms in the examination system, the fact remains that most universities and higher education institutions have not adopted the same. Some reasons for the delay in implementation of reforms in the academic and examination system are as follows:-

1) Unfortunately, a large section of the society suffers from inertia and is, therefore, reluctant to accept any change.
2) The new system which is planned for implementation has not been clearly explained.
3) Most of the teachers, academic administrators and community at large are inattentive to the intricate technicalities of examinations which affect their reliability, validity & objectivity.
4) There are vested interests that perpetuate the existing practices.
5) Additional time is required to prepare proper guidelines and manuals so as to enable the various stakeholders in understanding the new system.

- **Deficiencies in the Traditional Marking System**

Learners' Evaluation is the process of collecting, analyzing and interpreting the evidences to judge the level of performance performed by the individual learner or a group of learners for the purpose of making the decision of achievement level. The prevailing practice of

evaluation of learners that has been in existence since long involves evaluating the performance of an individual or group of individuals at the end of an academic year within a stipulated time. The learners are often required to express their understanding or mastery over the content included in their curriculum for a complete year within a span of three hours and their efforts over the year are often completely ignored. The present system of evaluation also does not provide for the application of multiple techniques of assessment of the learner's performance in a valid and reliable way. Apart from the several ills that prevail in the examination system through inappropriate testing methods and tools, the current practice of awarding numerical marks for reporting the performance of learners suffers from several

drawbacks and is a source of a variety of errors. Further, the problem gets compounded due to the variations in the marks awarded in different subjects. The 'raw score' obtained by the learner, is, therefore, not a reflection of his true ability.

Our aim to assess the learner's true ability is not being served by the current practice of evaluation. Excellence in quality education can be achieved by evaluating the true ability of the learners with the help of continuous evaluation. **Some deficiencies in the present marking system are listed as follows:-**

1) A difference of one mark is an unrealistic indication of difference in ability. Calibrating students on a 101 point scale (0 to 100) as required in the marking system cannot be objectively achieved.
2) Judgmental bias reflected in the assessment of learners, particularly in the subjective type of answers results in subjectivity in marking.
3) The score of zero which is artificially created for the convenience of the user does not represent zero ability.
4) The score of hundred does not reflect perfection in performance.
5) Marks tend to be unreliable as a consequence of subjectivity due to inter and intra examiner variability.
6) The magnitude of the subjective errors in marking is reported to vary from ten to twenty five (10-25) percentages.
7) Marks obtained in the examinations are considered as the yardstick of the quality of performance which is very sacrosanct for the society.
8) The marks awarded by examiners are often affected by many factors such as unfair means, erratic marking, and subjectivity of the examiners, etc.
9) It is unfair to label a student as 'pass' or 'fail' on the basis of such unreliable evaluation.
10) The 'pass' or 'fail' system often results in promoting corrupt practices besides being discriminatory.

- **Advantages of Grading System**

In view of the deficiencies mentioned above, it is desirable that the marking system used for the declaration of results is replaced by the grading system. According to the grading system, students are placed in ability bands that represent a range of scores. These ability bands may vary according to the number of categories for the classification of the performance of the learners. This ability range may be designated with alphabetical letters called as GRADE. The system of awarding grades would provide a more realistic picture of learner's ability than the prevailing marking system.

However, before we go in for the introduction of grades in place of marks, let us be very clear about one thing. Each method of reporting student performance –marks or grades has its own set of problems and limitations. However, this should not prevent the efforts to use a more scientific and reliable system so as to minimize the shortcoming and difficulties.

Due to the superiority of the grading system over the conventional marking system, several premier institutions and universities of high repute in India as well as abroad have introduced it successfully. **There are several advantages of the grading system; some of them are listed below:**

1) Grading is a far more satisfactory method than the numerical marking system as it reflects an individual learner's performance in the form of a certain level of achievement in relation to the whole group of learners.

2) The Grading system ensures natural classification in qualitative terms rather than quantitative terms since it expresses a range /band of scores to which a student belongs such as O, A, B etc….

3) The award of grades provides a permanent record of the learner's growth and development that might be helpful for institutions of higher education for allocating seats for prospective employers.

4) It may be very helpful for the institutions itself in making a kind of decisions pertaining to placement and promotions.

5) Grading does not require making fine distinctions in performance when no such distinctions actually exist.

6) It is based on a realistic concept of 'errors of measurement'.

7) Grades are relatively free from extraneous factors like difficulty of the examination, examiner bias, nature of the subject being examined, etc.

8) Grades can be interpreted easily and directly and can be used to prepare an accurate 'profile' of a student'.

9) The system of assigning Grades as opposed to giving Marks will help the creation of healthy competition among students since the rat race for obtaining marks will be eliminated. This will indirectly contribute to relieving the students from undue tension and pressure that may occasionally lead to suicides, trauma, etc.

1.   INTRODUCTION

Department of Technology, Shivaji University Kolhapur has been offering 4 post-graduate programs leading to Master's degree in Technology (M.Tech.) since 2006-07. Admissions to this program are based on primarily on the valid GATE (Graduate Aptitude Test Examination) score. However, if GATE candidates are not available, then the admissions are as per the norms set by the DTE/ Shivaji University, Kolhapur. These norms include the performance of a candidate in a common entrance test conducted by the Department of Technology of Shivaji University, Kolhapur. The intake for the P.G. program of various courses sanctioned by AICTE is as follows.

Sr. No.	Name of the M.Tech Program	Total intake	Open	OBC	SC	ST	Sponsored
1	Computer Sc. & Technology	18	7	3	2	1	5
2.	Electronics Technology	18	7	3	2	1	5
3.	Energy Technology	18	7	3	2	1	5
4.	Environmental Sc. & Technology	18	7	3	2	1	5

2. CURRICULUM

2.1. Curriculum:

Every program with specialization has a prescribed course structure which in general terms is known as Curriculum. It prescribes courses to be studied in each semester; the relevant information containing course structure along with detail syllabus for each course of each program is updated periodically and is uploaded on the website.

2.2. Semesters:

The Department of Technology implements a credit based curriculum and grade based evaluation system. P.G. program is of four semesters. The academic courses are delivered in the first two semesters and during the period of vacation after second semester; the student has to undergo 8 weeks industrial training. Dissertation work is carried out by a student in the third and fourth semester. The first semester begins in the second week of July and ends by the last week of November while the second semester begins in the first week of January and ends by the second week of May. Total duration for each semester is generally of 20 weeks including the period of examination, evaluation and grade declaration.

2.3. Course Credit

Education at the Department of Technology is organized around the semester-based credit system of study. The prominent features of the credit system are a process of continuous evaluation of a student's performance/progress and flexibility to allow a student to progress at an optimum pace suited to his/her ability or convenience, subject to fulfilling minimum requirements for continuation.

A student's performance/progress is measured by the number of credits that he/she has earned, i.e. completed satisfactorily. Based on the course credits and grades obtained by the student, grade point average is calculated. A minimum grade point average is required to be maintained for satisfactory progress and continuation in the program. Also a minimum number of earned credits and a minimum grade point average should be acquired in order to qualify for the degree. All programs are defined by the total credit requirement and a pattern of credit distribution over courses of different categories.

2.4 Course credits assignment

Each course, except a few special courses, has a certain number of credits assigned to it depending upon its lecture, tutorial and laboratory contact hours in a week. This weightage is also indicative of the academic expectation that includes in-class contact and self-study outside of class hours.

Lectures and Tutorials: One lecture or tutorial hour per week per semester is assigned one credit.

Practical/Laboratory: One laboratory hour per week per semester is assigned half credit.

Example: Course: XYZ Technology: 4 credits (3-0-2)

The credits indicated for this course are computed as follows:

3 hours/week lectures = 3 credits

0 hours/week tutorial = 0 credit

2 hours/week practical = $2 \times 0.5 = 1$ credit

(3-0-2) **4** credit course = (**3** h Lectures + **0** h Tutorial + **2** h Practical) per week

$$= \mathbf{5} \text{ contact hours per week}$$

2.5 Earning credits

At the end of every course, a letter grade is awarded in each course for which a student had registered. On obtaining a pass grade, the student accumulates the course credits as earned credits. A student's performance is measured by the number of credits that he/she has earned and by the weighted grade point average.

The credit system enables continuous evaluation of a student's performance, and allows the students to progress at an optimum pace suited to individual ability and convenience, subject to fulfilling minimum requirement for continuation.

2.6 Evaluation system

1. Semester Grade Point Average (SGPA) =

    $$\frac{\sum (\text{course credits in passed courses X earned grade points})}{\sum (\text{Course credits in registered courses})}$$

2. Cumulative Grade Point Average (CGPA) =

    $$\frac{\sum (\text{course credits in passed courses X earned grade points}) \text{ of all Semesters}}{\sum (\text{Course credits in registered courses}) \text{ of all Semesters}}$$

3. At the end of M. Tech Program, student will be placed in any one of the divisions as detailed below (According to AICTE Handbook 2011-12):

    Ist Division with distinction : CGPA $\geq$ 8.25 and above

    Ist Division   : CGPA $\geq$ 6.75 and < 8.25

    IInd Division   : CGPA $\geq$ 6.75 and < 6.25

As per AICTE Handbook (2011-12), new gradation suggested as follows.

Table 1

Grade Points	Equivalent Range
6.25	55%
6.75	60%
7.25	65%
7.75	70%
8.25	75%

Conversion of CGPA to percentage marks for CGPA$\geq$5.0 can be obtained using equations.

Percentage marks = (CGPA x 10) − 7.5

An example of these calculations is given below:

Typical academic performance calculations - I semester

Table 2

Course no.	Course credits	Grade awarded	Earned credits	Grade points	Points secured
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6 (col4 *col5)
MALXXX	5	CC	5	6	30
CSLXXX	4	CD	4	5	20
PHLXXX	4	AA	4	10	40
PHPXXX	2	BB	2	8	16
MELXXX	4	FF	0	0	00
TTNXXX	2	AB	2	9	18
Total	21		17	38	124

1. Semester Grade Point Average (SGPA) =

$$\frac{(124)}{(21)} = 5.90$$

2. Cumulative Grade Point Average (CGPA) =
   Cumulative points earned in all passed courses = 124 (past semesters) + 124 (this sem.) = 248
   Cumulative earned credits = 23 (past semesters) + 21 (this sem.) = 44

$$\frac{\sum (124 + 124)}{\sum (23 + 21)} = 5.63$$

System of Evaluation Table

Table 3

Grade	Grade Points	Marks obtained (%)			Description Performance
		Regular Semester	**Re-Examination**	**Summer Semester Examination/ Re-appear**	
AA	10	91-100	--	--	Outstanding
AB	09	86-90	91-100	91-100	Excellent
BB	08	76-85	86-90	81-90	Very Good
BC	07	66-75	76-85	71-80	Good
CC	06	56-65	66-75	61-70	Fair
CD	05	46-55	56-65	51-60	Average
DD	04	40-45	40-55	40-50	Poor
FF	00	Below 40	Below 40	Below 40	Fail
EE					Incomplete
WW					Withdrawal
XX	--	--	--	--	Detained
ABSENT	--	--	--	--	Absent
PP	--	--	--	--	Passed (Audit Course)
NP	--	--	--	--	Not Passed (Audit Course)

3. Evaluation Scheme:

Out of total 100% theory weightage, 50% weightage are allotted for Continuous Internal Evaluation (CIE). In CIE minimum 20% weightage are required to become eligible for Semester End Examination. (SEE).

1. CIE (50% weightage) includes :

   Internal Test – 1, of 25% in 5th week on 1st and 2nd UNIT   - (Duration 1hr.)

   Internal Test - 2, of 25% in 10th week on 3rd and 4th UNIT   - (Duration 1hr.)

2. For the Semester End Examination (SEE), 50% weightage (3 hrs. duration) paper will be set, in which student must secure minimum 40 % as university examination passing head and Minimum 40% marks required in CIE to become eligible for SEE.

3. Final theory letter grade will be awarded (100 %) will be the addition of CIE (50%) and SEE (50%).

4. Final laboratory letter grade will be awarded (100 %) will be the addition of CIE (50%) and SEE (50%).

5. Semester End Examination (SEE) for laboratory consists of External Practical Evaluation (EPE)/External Oral Examination (EOE). Continuous Internal Examinations (CIE) for laboratory consists of Internal Practical Evaluation (IPE) / internal oral Evaluation (IOE).

6. The assessment of laboratory course from the 1st semester onwards shall be carried out in two parts.

   i. CIE of laboratory consists of IPE/IOE shall be based on turn-by-turn supervision of the student's work and the quality of his/her work as prescribed through laboratory journals and his/her performance in oral or Practical/Oral examinations uniformly distributed throughout the semester.

   ii. SEE of laboratory shall be based on performing an experiment followed by an oral examination or a written examination.

   iii. The relative weightage for CIE and SEE for assessment of laboratory courses shall be 50% and 50% respectively from second year onwards and a minimum performance of 40% in both CIE and SEE separately shall be required to get the passing grade.

   iv. SEE for laboratory course shall normally be held one week before the SEE for theory courses and shall be conducted by a panel of examiners consisting of external and internal examiner. This activity shall be coordinated by

Department Examination Coordinator (DEC) in consultation with Coordinator of the respective department.

9. A student failed in SEE of a laboratory course in a regular semester shall be eligible to appear for examination conducted along with SEE of laboratory courses of the subsequent semester. Such examination shall be fairly comprehensive (generally of 3 hours similar to EPE/EOE i.e. External Practical/Oral Examinations) to properly judge his/her practical skill and theoretical knowledge for that laboratory course. He/She shall suffer a grade penalty as per Table 3.

3.1 Re-examination

If the student misses the continuous internal evaluation of semester due to illness or accident, his application for re-examination must be supported by proper medical certificate duly approved by medical authority. In the event of death of parent or guardian, the application should be supported by adequate evidence of the same.

Any student who fails to apply for re-examination in the prescribed manner will be declared as failed in those courses. The Co-ordinator and Director is empowered to take decisions to handle such issues. **However, after the re-examination, grade awarded will be as per table 3.**

3.2 Summer Term

❖ About summer term: The student who has failed to clear theory courses/practicals in the regular two semesters of an academic year will be allowed to reappear in the Summer Term which will be held in the summer vacation, by payment of necessary fees on a specified date.

❖ By paying appropriate fees as per university rules student will be allowed for reappearing in the Summer Term

❖ Examinations in the Summer Term: The end summer examination of 100 marks will be held for theory courses at the end of summer term.

❖ The semester end examination of summer practical/laboratory have 100 % weightage (Two hours duration) will be held after theory examination. This shall be evaluated by panel of two examiners for each practical course. In this evaluation, weightages shall be 50:50, for performance of the student in implementation of the practical assigned and oral, respectively.

❖ However, after the summer term examination the highest grade awarded will be **as per table 3**.

3. 3 Re-appearing

❖ Student can **re-appear** in the theory and/or practical's in which he/she has secured FF grade, by the payment of necessary fee and he/she can reappear for end-semester examinations of theory and practical's of first and second semester, which will be conducted at the end of first and second semester, respectively.

❖ The theory courses for which the student is re-appearing shall appear for continuous Internal Evaluation (50% weightage) consist of Internal Test 1st (25% weightage) and Internal Test 2 (25% weightage) and Semester end Examination (50% weightage) of 3hrs. Duration shall be used for the calculation of new grade, which will not exceed BB from regular semester.

❖ The semester end examination for laboratory of reappearing students shall be conducted with regular student's practical examination. This examination will be of 100 % weightage and the weightages shall be 50:50, for the performance of the student in the implementation of the practical assigned and the oral, respectively. However, in no case the highest grade **awarded will exceed BB from regular semester.**

4 Attendances
❖ Attendance in classes for all the subjects is compulsory and should be 100%.
❖ Relaxation of maximum 25% in attendance is permissible to the students on account of medical problems or any genuine reason.
❖ Student not having 75% attendance in any course/ practical will not be allowed to appear in the end-term examination of that respective course/ practical and given XX grade. He/she has to reregister for all such courses.

5 Student Status

There are various types of student's status:
❖ Full-time Student on Teaching Assistantship (GATE)
❖ Full-time Sponsored Student
❖ Full-time Self-finance Student

5.1 Full-time Student on Teaching Assistantship
A full-time student should complete the Programme within **24 months**. A Full Time student on Teaching Assistantship will receive the Institute Assistantship for the duration of **four** semesters of the M.Tech. Programme, provided he/she has cleared GATE, Such students are awarded **Teaching** Assistantship on the following condition.

i) They should not accept any other scholarships/ employments/financial assistance/salary etc. awarded through any other sources or shall not hold any appointment, paid or otherwise.

ii) They are not sponsored by any organization.

iii) They do not leave the course midway or appear in any competitive examination not related to engineering/technology. They should submit the undertaking in this regard mentioning the refund of scholarship.

The present rate (supported by AICTE (MHRD)) of Teaching Assistantship of **Rs. 8000/-** per month is payable from the date of registration of the first semester till the date of final assessment of dissertation. However in no case the duration of teaching assistantship will exceed 24 months.

(a) Students getting the assistantship will be required to assist in teaching or research, as assigned by the department, to the extent of 6 to 8 hours per week for conduct of practicals/tutorials/lab courses.

(b) The continuation of the assistantship will be subject to satisfactory performance of the duties assigned by the Department as well as satisfactory academic performance.

(c) All M. Tech. students normally will have to complete the programme in 24 months.

(d) For continuation of full assistantship minimum Cumulative Grade Point Average (CGPA) is 6.75. Those who get CGPA less than 6.75 will receive the teaching assistantship of Rs. 2000/- per month till he attains CGPA of 6.75. After he attains the CGPA of 6.75 he will be paid the full teaching assistantship.

5.2 Full-time Sponsored Students

Sponsored candidates who are admitted to the programme should have full financial support from the concerned sponsoring agency, namely, the Govt. Department, organization, Industry, etc., for the entire duration of the programme. They can complete programme on time, depending on the nature of sponsorship.

6. Pattern of Courses

The courses offered for the PG Programmes may be Lecture Courses, Laboratory Courses, Seminars and Projects, and Field Visits.
   ❖ The credit for a course is mentioned in the courses of study profile of department.
   ❖ Students are required to complete all the credit required for the PG programme as approved by the Departmental Committee from time to time.

❖ **Seminar**
Seminar shall satisfy the following conditions:
i) Each seminar shall carry two credits and treated as a course for purpose of registration and evaluation.
ii) Seminar examiners, at least two examiners including guide, appointed by the Co-ordinator shall organize the Seminars and forward the grades/marks awarded by the panels of examiners to the Controller of Examination Office by the end of the Semester.
iii) Examiners should be P.G. Teachers

❖ **Industrial Training**

i) The period of vacation after second semester, the student has to undergo 8 weeks Industrial training and as a part of evaluation at the end of third semester student should submit the report for the same and give presentation to the concern guide

ii) Industrial Training examiners appointed by the Co-ordinator. Department should organize the Seminars and oral exam and forward the grades/marks awarded by the panels of examiners to the Controller of Examination Office by the end of the Semester.

7. Course Credit Requirements

❖ The total minimum credit requirement for M. Tech. programme is 80 credits including the dissertation as per AICTE norms

8. Course Assessments and award of grades

8.1 Assessment

For every course taken by the students, he/she is assigned a letter grade on his/her combined performance in all the assessments. These grades are described by the letters and corresponding grade points. The award of grades based on absolute marks out of 100 shall be made as, AA (10 points), AB (9 points), BB (8 points), BC (7 points), CC (6 points), CD (5 points), DD (4 points), FF (0 points - Re-registration), EE-Incomplete, and W – Withdrawal. Minimum passing grade in a course is DD.

If a student does not take or fails in the re-examination, he/she will be awarded the grade **F**. A student getting an **F** grade has to re-appear.

The award of grades based on marks out of 100 weightage shall be made as shown in Table 3. Note that the grade boundaries as indicated in the table may be marginally adjusted and the upper and lower limits are subject to limitations of percentage of marks.

8.2 Seminar Grade

❖ If a student either does not submit his seminar report by the prescribed date or he/she is absent for presentation on the scheduled date he/she shall be awarded E grade unless he/she is given extension by the coordinator under exceptional circumstances. However in no case the extension shall exceed one month.

❖ All students who get EE grade in Seminar shall be allowed to complete the evaluation during the period earmarked for re-examination and the grade will be as per table given for re-examination.

8.3 Industrial Training

❖ If a student either does not submit his/her training report by the prescribed date or he/she is absent for presentation on the scheduled date he/she shall be awarded E grade unless he/she is given extension by the coordinator under exceptional circumstances. However in no case the extension shall exceed one month.

❖ All students who get EE grade in industrial training shall be allowed to complete the evaluation during the period earmarked for re-examination and the grade will be as per table given for re-examination.

8.4 Dissertation

❖ The student shall be allowed to submit the dissertation phase I report only after the completion of minimum 50% work of the total project with intermediate /partial results of the dissertation project to the concern guide and the dissertation phase II report only after the full-fledge demonstration of his /her work to the concerned guide. Assessment of the dissertation shall be based on design & implementation aspects, documentation & presentation skills, utility of the dissertation work & publications based on the same. For the dissertation phase I and phase II concern guide should guide to each student minimum for **2**hrs per week till the final submission of the dissertation of the concern student.

❖ Students are required to submit final hard bound dissertation report to the respective Department with consent of guide for both dissertation phase I &phase II .

❖ The viva-voce will be conducted by the department.

❖ Forms for submission of assessed Dissertation, duly completed must be deposited to the Controller of Examination office along with the provisional clearances from Accounts Section.

❖ Final grade/marks reports are to be sent by the panel of examiners to the Controller of Examination office on completion of viva-voce.

8.5 Late Submission of Dissertation
In any case the student has to complete M. Tech. Programme in four years. The extensions given can exceed till the end of the last academic year. Whenever, any project stage is not submitted before the last date as specified in the academic calendar, the student is required to:

a) Make specific request for extension with justification (without grade restriction) at least 15 days before the last date of submission as specified in the academic calendar.

b) Pay the Institute fees and register for the **fifth/sixth/seventh/eighth** semester for the extension after forth/fifth/sixth/seventh semester, respectively

8.6 Dissertation Evaluation

❖ The Dissertation phase I assessment and pre-submission assessment of dissertation PART II, if any, will be done by a panel appointed by the controller of examination office in consultation with the Guide. The panel shall consist of the Guide and at least one P.G. teaching faculty members conversant with the field from the university jurisdiction.

❖ The Dissertation phase II assessment will be done by a Board of Examiners appointed by the Controller of Examination office consisting of the following:

Chairman: Guide.

Guide/co-Guide: Nominated by Department of Technology.

❖   **Internal Examiner: P.G. teacher** Nominated by COE office, conversant with the field, in consultation with the Guide and He/She should be from the university jurisdiction.

External Examiner: From the panel of examiners approved by the appointment section, COE Office, Shivaji University, Kolhapur.

❖ The minimum passing grade in each of the dissertation assessment shall be CD.

❖ In case a student gets a fail grade in any of the project assessment he/she should carry out additional work/modifications etc. as suggested by the panel and appear for assessment within one month from the date of previous assessment. At this assessment, he/she should not be given a grade higher than BB.

❖ A full-time/GATE student should not take up any other assignment before submitting his/her dissertation.

8.7 Submission of Dissertation

He /She can be allow to submit his/her Dissertation Report by the end of IV Semester, provided that he/she should earn all the credits of Semester I,II & III respectively after earning all the credits of First Year.

8.8   Award of Degree

He /She will be awarded the M.Tech. Degree after acquiring 80 credits.

9.0 Performance Requirements

❖ The performance of a student in a semester is indicated by a number called the Semester Grade Point Average (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses and projects taken by the student during the semester.

❖ Example: Suppose in a given semester a student has taken five courses having credits C1, C2, C3, C4, C5 and his/her grade points in those courses are G1, G2, G3, G4, G5 respectively. Then his/ her

$$SGPA = \frac{C1\,G1 + C2\,G2 + C3\,G3 + C4G4 + C5G5}{C1 + C2 + C3 + C4 + C5}$$

❖ SGPA will be calculated (after re-examination, if any) on the basis of the final grades awarded. The SGPA is calculated up to two decimal places.

❖ An up-to-date assessment from the time the student entered the Institute is obtained by calculating a number called the Cumulative Grade point Average (CGPA).

❖ The CGPA is the weighted average of the grade points obtained in all the courses taken by the student since he/she entered the Institute. It is calculated in the same manner as the SGPA. **CGPA for the course credits and the project credits will be separately calculated and shown in the grade card, along with the overall CGPA.**

❖ In case of a student clearing a failed course, or a course taken in lieu of an earlier course as approved by the Department, the earlier failed grade would be replaced by the new passing grade in calculation of the CGPA.

❖ For continuation of a student in the Programme the minimum CGPA must be 5.00.

❖ For CGPA requirement of 5.00 if re-examination is allowed in any of the courses and is taken by the student, CGPA will be calculated using the new grade obtained by the student in the re-exam.

10. Leave Rules

The students getting teaching assistantship are entitled for a leave in an academic year - maximum of 30 days (including medical leave of 10 days) but they are not entitled for any vacation during summer/winter.

11. Departmental Committee

Departmental Committee consists of following:

Director- Chairman

Branch Coordinator from respective branch – member

Senior faculty from respective branch – member

Guide/Course Coordinator- member)