



## **B.M.S. COLLEGE OF ENGINEERING BENGALURU**

Autonomous Institute Affiliated to VTU

### **ACADEMIC RULES AND REGULATIONS**

**Applicable to all Autonomous Programmes  
BE, MTech, MBA and MCA**

**(With effect from August 2018)**



**B.M.S. COLLEGE OF ENGINEERING, BENGALURU**  
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### 1. SHORT TITLE AND COMMENCEMENT

- 1.1 The regulations listed under this head are common for all programmes offered by the college and are amended based on the Guidelines for Implementation of Academic Autonomy at Colleges (Amended-2018) by Visvesvaraya Technological University, Belagavi. These regulations shall be effective from academic year 2018-19.
- 1.2 The regulations are subject to amendments made by the Academic Council with the approval of the BOG of the college from time to time, and keeping the recommendations of the Board of Studies in view.

### 2. Definitions:

- (a) “University” means Visvesvaraya Technological University (VTU)
- (b) “College” means B.M.S. College of Engineering (BMSCE)
- (c) “Commission” means University Grants Commission (UGC)
- (d) “Council” means All India Council for Technical Education (AICTE)
- (e) “Statute” means VTU Autonomous College Statute, 2006
- (f) “Academic Autonomy” means freedom granted by the University to the College in all aspects of conducting its academic programmes for promoting academic excellence
- (g) “Autonomous College” means a college notified as an autonomous college as per the VTU Autonomous College Statute, 2006
- (h) “Regular Students” means students who are admitted to the first year of the respective programme
- (i) “Lateral Entry” means students who are admitted to the third semester of the respective programme (Undergraduate Engineering Programme or the Post Graduate MCA programme, based on the qualification at the time of entry)
- (j) “Branch” means specialization in a programme like B.E. degree programme in Civil Engineering or B.E. degree programme in Computer Science and Engineering etc.
- (k) “Course” means a subject either theory or practical identified by its title and code number. For example,

18 MA 1BS EM1 is a course introduced during 2018, offered by **MA**thematics Department, during 1<sup>st</sup> semester, of type **Basic Science**, with title ‘**Engineering Mathematics-1**’;

18 MBA PC MPO is a course introduced during 2018, for the **MBA** programme, of type **Professional Core**, with title ‘**Management Process and Organizational Behaviour**’;

18 MCA PE MCW is a course introduced during 2018, for the **MCA** programme, of type **Professional Elective**, with title ‘**Mobile Computing and Wireless Communication**’;

18 CV CT PC MC is a course introduced during 2018, for the **MTech** programme by **Civil** department, with specialization **Construction Technology**, of type **Professional Core**, with title ‘**Mechanization in Construction**’.



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### 3. Preamble:

There is a need to derive full benefits of the academic autonomy accorded to the college towards addressing the 21st century challenges faced by the technical education system in the country, like:

- Ever increasing influence of science and technology and their impact on human society.
- Shrinking time scale of new developments and the high rate of obsolescence in the older practices.
- Penetration of Information Technology in all sectors of human activity and economic development.
- Service sector becoming a major avenue for employment of technical professionals and also for economic gains.
- Emergence of **knowledge** as a key driver for the progress of nations and for increasing their influence on the world scenario.

The academic autonomy of the college offering technical education attempts to convert these challenges into opportunities, and it is expected that the 21st century engineers will be required to have:

- Strong foundation in the basics of mathematics, science and engineering discipline.
- Command over the chosen area of technical specialization.
- Capacity to apply the professional knowledge and skills acquired.
- Good competence to learn a subject on one's own without major external help.
- Expertise in analysis, design, modeling and simulation of complex systems.
- Scaling up, mass production, system operation and maintenance.
- Estimation of costs and time factors in an assignment.
- Ability for rational, logical, orderly and objective thinking.
- Skills in personnel management and human relations, and
- Leadership qualities including spirit of tolerance, patience and team work.

The college exercises the academic freedom given to it by the University with

- responsibility and accountability
- Use the available opportunity to demonstrate its capabilities and innovative skills, to become visible in the higher education system and,
- Gain the confidence, gratitude and respect of all its stake holders, especially students, alumni, parents and the society at large

Hence, it becomes particularly important for the College as well as the University to be able to maintain and enhance its reputation, image and visibility in the technical education system as a whole.

### 4. Academic Programmes:

#### 4.1 General:

- (a) The Academic Autonomy is applicable for all programmes offered by the college: B.E. Degree programmes at Undergraduate (UG), M. Tech., M.B.A and M.C.A programmes at Postgraduate (PG), M.Sc. (Engineering by research) and the Ph.D



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programme. The programmes fulfill the minimum academic quality and standards for the award of Degrees prescribed by the University, the Council and the Commission.

- (b) The academic Autonomy provides an opportunity to the college to make schemes of instruction, syllabi, scheme of examinations and other aspects, with approval of its Academic Council, while fulfilling the minimum academic standards of the University for the Award of Degrees.
- (c) The College has the freedom to start Diploma (post- polytechnic Diploma, post-UG and post-PG levels) and/or Certificate programmes with the approval of its Academic Council. The issuance of certificates/diplomas on completion of such programmes shall be made under the seal of the concerned College only.
- (d) The College has the freedom to evolve methods for assessing the students' performance, notifying the results, issuing the grade cards/transcripts, migration and other certificates except the Degree Certificates.
- (e) In order to get the various benefits of academic autonomy, the College to structures its various academic programmes based on the Semester Scheme by introducing Credits for academic activities, bring in Examination Reforms for better achievement testing, award Letter Grades and Numerical Grade Points/ Averages for students' performance and set appropriate Passing Standards as covered later in these Regulations.
- (f) Following the guidelines recommended by the University, with regard to Semester Scheme, Credit System, Examinations, Letter Grades and Numerical Grade Points/Averages, enables their students to avail of horizontal/ vertical mobility and transfer of credits from one Autonomous College to another and related benefits of academic autonomy.

#### **4.2 Nomenclatures of Programmes:**

- (a) The College uses the nomenclature for their Degree programmes as specified by the Commission, and the Degree Certificates issued by the University to their awardees bears the name of the College as well. This helps in maintaining the identity of each programme conducted at the College and also ensuring its accountability.
- (b) Therefore, the nomenclatures and their abbreviations given below, shall continue to be used for the Degree programmes offered by the College under the University:
  - (i) **UG Level:** Bachelor of Engineering (B.E).
  - (ii) **PG Level:** Master of Technology (M. Tech.),  
Master of Business Administration (M.B.A.)  
Master of Computer Applications (M.C.A.).
  - (iii) **Research Level:** M.Sc. (Engineering) by Research  
Doctor of Philosophy (Ph.D.).

Besides, the branch, the subject of specialization, if any, shall be indicated in brackets after the abbreviation; e.g., B.E. (Mechanical Engineering), M.Tech.(Power Electronics).



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#### 4.3 Programmes Offered:

4.3.1 Undergraduate degree programmes offered by the College are listed in Table 1:

**Table 1:** Undergraduate Programmes offered by the College

SNo	Title of the UG Programme	Abbreviation	Established
1	Civil Engineering	CV	1946
2	Mechanical Engineering	ME	1946
3	Electrical and Electronics Engineering	EE	1946
4	Electronics and Communication Engineering	EC	1971
5	Industrial Engineering and Management	IM	1979
6	Computer Science and Engineering	CS	1983
7	Telecommunication Engineering	TE	1986
8	Information Science and Engineering	IS	1987
9	Electronics & Instrumentation Engineering*	EI	1991
10	Medical Electronics	ML	1992
11	Chemical Engineering	CH	1995
12	Biotechnology	BT	2002
13	Aerospace Engineering	AE	2018

\*Earlier titled and offered as Instrumentation Technology

4.3.2 Postgraduate degree programmes offered by the College are listed in Table 2:

**Table 2:** Post Graduate Programmes offered by the College

SNo	Title of the PG programme	Abbreviation	Offered by	Established
1	Construction Technology	CT	CV	1983
2	Machine Design	MD	ME	1985
3	Electronics	EL	EC	1986
4	Power Electronics	PE	EE	1991
5	Computer Science & Engineering	CS	CS	1993
6	Digital Communication Engineering	DC	EC	1996
7	Environmental Engineering	EN	CV	1997
8	Transportation Engineering & Management	TE	CV	2006
9	Computer Network Engineering	CN	IS	2011
10	Bio-Chemical Engineering	BC	CH	2013
11	Bio-Medical Signal Processing & Instrumentation	BI	ML	2013
12	Manufacturing Science & Engineering	MS	ME	2014
13	VLSI Design & Embedded Systems	VE	EC	2014
14	Master of Business Administration	MBA	MBA	1992
15	Master of Computer Applications	MCA	MCA	1984



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#### 4.3.3 Research Level programmes offered by the College:

The college offers the following Research programmes,

- (i) M.Sc. (Engineering) by Research, and
- (ii) Doctor of Philosophy (Ph.D.),

The research centers recognized by the University are listed in Table 3.

**Table 3:** Research Centers recognized by the University

SNo.	Research Center	Established
1	Civil Engineering	2002
2	Mechanical Engineering	2002
3	Electrical and Electronics Engineering	2002
4	Electronics and Communication Engineering	2002
5	Industrial Engineering and Management	2002
6	Master of Business Administration	2004
7	Chemical Engineering	2004
8	Mathematics	2004
9	Biotechnology	2009
10	Computer Science and Engineering	2010
11	Information Science and Engineering	2011
12	Physics	2011
13	Chemistry	2011
14	Telecommunication Engineering	2013

#### 4.4 Programme Duration:

- (a) **Normal Duration:** The normal duration of fulltime academic programme is the same as that followed by the University, i.e., four years for B.E., two years for M.Tech., and M.B.A., three years for M.C.A., two years for M.Sc. (Engg.by Research), three years for Ph.D (Full time).
- (b) **Prescribed Credits:** As a flexible credit system is followed for coursework, it is to be noted that the programme duration in the case of UG and PG shall also be dictated by the period in which a student earns the prescribed credits for the award of Degree. Hence, it is possible for an outstanding student to earn the required credits in a shorter time than that ordinarily prescribed for the relevant programme in (a) above.
- (c) **Add-on courses:** In such cases, the College provides opportunity for such a student to register for Add-On courses being conducted at the College or to take up suitable internship until completion of the prescribed programme duration.
- (d) **Maximum Duration:** The maximum period which a student can take to complete a fulltime academic programme shall be the same as that prescribed by the University from time to time; e.g., double the normal duration of the programme, i.e., eight years for B.E., four years for M. Tech., M.B.A., six years for M.C.A., four years for M.Sc.(Engineering by Research), six years for Ph.D., two years for Diploma and one year for Certificate.



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- (e) Besides, the maximum period for a programme is also be dictated by the fact that a student has to demonstrate the specified minimum academic performance by registering for the prescribed minimum number of credits in every semester for continuing with the programme. And, this period can be equal to or smaller than the maximum period indicated as in (d) above.

#### 4.5 Admission of Students:

- (a) **Admissions:** The admission of students to various UG, PG and Research Degree programmes listed under Section 4.3, is governed by the State Government and/or the University Policies/Practices in this regard. In particular, the admission of students for Research Degree programmes at the College shall be made by the University by associating the College concerned in the process as per the provisions in the VTU regulations governing the Degree of Ph.D., June 2017. However, the admission of students to Diploma and Certificate programmes shall be made by the College on its own, by following the Regulations approved by its Academic Council. In all the cases, it is necessary to follow the statutory provisions of reservation of seats to different categories of candidates from time to time.
- (b) There is provision for candidates with a polytechnic Diploma or any other qualification approved by the Council and the Commission to join UG Degree programmes at the beginning of the second year of the 4-year programme as per the prevailing practice in the University.
- (c) The students can opt to migrate from one branch or specialization to another branch or specialization at the same College or at another Autonomous/ Affiliated/ Constituent College under the University at the beginning of the second year. In these cases, the College follows the Rules and Regulations of the University/Council.
- (d) **Eligibility Criteria:** The eligibility criteria for admission of students to UG, PG and Research Degree programmes at the College shall be the same as those prescribed by the University. But, the minimum requirements for admission to Diploma programmes shall be the Post Polytechnic Diploma or equivalent qualification or the B.E. or equivalent Degree. The equivalence or its method of determination shall be as notified by the University from time to time. However, the College is free to prescribe appropriate criteria for admission to Certificate programmes after receiving approval from its Academic Council.
- (e) The eligibility criteria for admission of students from a non-Autonomous College to an Autonomous College, from one Autonomous College to another Autonomous College and from University scheme at an Autonomous College to its Autonomous scheme, shall be fixed by the Academic Councils of the respective Autonomous Colleges, who shall frame suitable Rules for this purpose consistent with the objectives of academic autonomy. A copy of the Rules so adopted shall be sent to the University within a fortnight of such adoption.
- (f) The eligibility criteria for the admission of students from other Universities to an Autonomous College shall be fixed by the Academic Council of the College by getting the individual cases examined by the concerned Board(s) of Studies and also by following the



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same criteria as in (e) above and recommending the names of such candidates qualifying for admission to the University for its approval.

#### 4.6 Semester Scheme:

- (a) The Semester Scheme provides several benefits to technical education programmes in contrast to the Annual Scheme. Therefore, the College adopts the Semester Scheme for its UG, PG and Research programmes.
- (b) **Academic Calendar:** There is uniformity in the functioning of the Semester Scheme for all academic programmes across the College, as this can provide good academic flexibility to their stake holders, particularly the students and the faculty members. For this purpose, each academic year is divided into semesters, with the calendar, durations and academic activities being fixed in advance by the college while maintaining a common opening /reopening date for the odd semester.
- (c) The breakdown of an academic year for implementing the Semester Scheme is given in Table 4 as a typical example, consisting of two regular semesters and a Supplementary semester in an academic year.

**Table 4:** Typical Schedule of Academic Year

SNo	Activity	Description	
1	Number of semesters in an academic year	Two regular semesters (Odd & Even) and a Supplementary Semester. For the First semester BE programme there is a three week induction programme at the beginning	
2	Duration of Regular Semester	19 weeks	
3	Duration of Supplementary Semester	08 weeks	
4	Semester Academic activities (duration in weeks)	Regular Semester(s)	Supplementary Semester
	Course Registration	0.5	0.1
	Course Work	15.5	7.0
	Examination preparation	1.0	0.2
	Examination (SEE)	1.0	0.2
	Declaration of Results	1.0	0.5
5	Evaluation	Continuous Internal Evaluation (CIE) and Semester End Examination (SEE), both have equal weightage in the student's performance in Course/Laboratory Work and other activities	
6	Other Items	The total number of academic days in an academic year shall be $\geq 180$	
		Academic schedules prescribed by the College shall be strictly adhered to by all the concerned	
		Students failing in any Course(s) shall register for the same again (re-register) and shall secure CIE and SEE afresh in each course(s). This shall continue until a pass grade is obtained in the said course(s).	
7	Supplementary Semester	Supplementary Semester conducted for the benefit of the students to clear their failed courses	



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- (d) **Course Registration:** A student shall register for courses (core or elective) to earn credits for meeting the requirements of a Degree/ Diploma/Certificate programme. Such courses together with their grades and the credits earned shall be included in the Grade Card issued by the College at the end of each semester, like odd, even, Supplementary and it forms the basis for determining the student's academic performance in that semester.
- (e) **Academic Schedules:** The calendar includes important academic activities to assist the students and the faculty. These include, dates assigned for registration of courses, dropping of courses and withdrawal from courses. This enables the students to be well prepared, minimize their chances of failure in CIE and/or SEE and take full advantage of the flexibility provided by the credit system.
- (f) **Induction programme as per AICTE guideline**

There is a 3-week long induction programme for the UG students entering the institution, right at the start. Normal classes start only after the induction programme is over.

The purpose of the Student Induction Programme is to help new students adjust and feel comfortable in the new environment, inculcate in them the ethos and culture of the institution, help them build bonds with other students and faculty members, and expose them to a sense of larger purpose and self-exploration. At the start of the induction, the students learn about the institutional policies, processes, practices, culture and values, and their mentor groups are formed. Its purpose is to make the students feel comfortable in their new environment, open them up, set a healthy daily routine, create bonding in the batch as well as between faculty and students, develop awareness, sensitivity and understanding of the self, people around them and the society at large.

- (g) **Registration of Courses:** Each student registers for coursework at the beginning of the semester. The permissible Course load to be either average number of credits of the Semester of the programme (for first year) or to be within the limits of minimum and maximum credits prescribed in each later Semester. A period of 2-3 days is specifically assigned for this event in the Academic Calendar for the students to seek proctor advice, discuss with the course instructors and complete the formalities.
- (h) **Dropping of Courses:** A specific time period is fixed, e.g., in the middle of a semester for this purpose to be based on the review to be conducted of students' performance in CIE by the concerned proctor. The review to mainly assist the students having poor performance to be facilitated to drop the identified course(s) (up to the minimum credits specified for the semester) without being mentioned in the Grade Card. Such Courses to be re-registered by these students and taken up for study at a later semester in the programme.
- (i) **Withdrawal from Courses:** A specific time period shall be identified by the College towards the end of a semester to help review the students' performance in CIE by the proctor, followed by the students having poor performance to withdraw from identified course(s) (up to the minimum credits specified for the semester) with mention in the Grade Card (Grade 'W'). Such Courses to be re-registered by these students and taken up



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for study at a later semester in the programme.

- (j) **Audit Courses:** In Addition, a student can register for courses for audit only with a view to supplement his/her knowledge and/or skills. Here also, the student's grades shall have to be reflected in the Grade Card. But, these shall not be taken into account in determining the student's academic performance in the semester. In view of this, it shall not be necessary for the College to issue any separate transcript covering the audit courses to the registrants at these courses.

## 5. Credit System:

### 5.1 General:

The institution follows a Choice Based Credit System (CBCS) from the academic year 2008-09 onwards. The students have an option of choosing from a wide range of electives (department, cluster and institutional) and complete the programme at their own pace. Value added courses are also offered as a part of extended learning in inter-disciplinary and multi-disciplinary domains. Thus the CBCS facilitates continuous learning and assessment. The CBCS for the various programmes provides a great opportunity to the students in their preparation to meet the challenging opportunities ahead.

**5.1.1 Major Benefits:** Major benefits accruing by adopting the Credit System are listed below:

- Quantification and uniformity in the listing of courses for all programmes at a College, like core (hard/soft), electives and project work.
- Ease of allocation of courses under different heads by using their credits to meet national /international practices in technical education.
- Convenience to specify the minimum/ maximum limits of course load and its average per semester in the form of credits to be earned by a student.
- Flexibility in programme duration for students by enabling them to pace their course load within minimum/maximum limits based on their preparation and capabilities.
- Wider choice of courses available from any department of the same College or even from other similar Colleges, either for credit or for audit.
- Improved facility for students to optimize their learning by availing of transfer of credits earned by them from one College to another.

5.1.2 In the Credit System, the course work of students is unitized and one credit is assigned to each unit after a student completes the teaching-learning process as prescribed for that unit (credit) and is successful in its assessment.

### 5.1.3 Credit Definition

One unit of course work is assigned **one credit** in the regular semester (Odd/Even semester) for:

- a) Theory Course conducted for one hour/week/semester
- b) Tutorials conducted for Two hours/ Week/ Semester
- c) Practical classes (Laboratory Courses) conducted for Two hours/ Week/ Semester



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However, in case of Supplementary semester, the course load is multiplied by two. These regulations form the basis to fix semester course load & weekly contact hours in the regular/Supplementary semesters.

Note: Other student activities like study tours, industrial visits, guest lectures shall not carry any credits

#### 5.2 Credit Structure:

A typical Credit Structure for coursework based on the above definition is given in Table 5. This shall be applicable for the coursework of students registered for all programmes offered by the institution.

**Table 5: Typical Credit Structure for Course**

Lectures (L) (Hours/Week)	Tutorials (T) (Hours/Week)	Laboratory Work (P) (Hours/Week)	Credits (L:T:P)	Credits (Total)
3	0	0	3:0:0	3
2	2	0	2:1:0	3
2	0	2	2:0:1	3
2	2	2	2:1:1	4
0	0	2	0:0:2	1

Thus, it is more appropriate to specify the eligibility requirements for award of Degree based on course work (like UG, PG) by prescribing the total number of credits to be earned, as an alternative to specifying the Programme Duration. This will be of great help in providing the well-needed flexibility to the students in planning their academic programmes and their careers.

**5.3 Credits to be earned for award of degree:** The total number of credits to be earned by a student to qualify for the Degree award from each Autonomous College is as given in Table 6.

**Table 6: Total Credits to be earned for Award of Degree**

Programme		Normal Duration		Total number of Credits to be Earned
		Years	Semesters	
UG Degree	B.E./ B. Tech.	4	8	175
	B.E / B.Tech.( Lateral entry)	3	6	135
PG Degree	M. Tech.	2	4	88
	M.B.A.	2	4	100
	M.C.A.	3	6	132
	MCA (Lateral Entry)	2	4	88

#### 5.4 Course Load in a regular semester:

The ODD and EVEN semesters are known as regular semesters. The course load for a student per semester as well as its minimum and maximum limits, are based on the guidelines by the University, which is based the AICTE Model Curricula for UG/PG Programmes (February 2018) and considering the academic strength and capability of an average student.



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- 5.4.1** In the first two semesters, the prescribed course load per semester is fixed and is mandated (20 credits / semester for the BE programme, 22 credits / semester for the MTech, MCA programmes, 25 credits/semester for the MBA programme). Withdrawal/dropping of courses in the first and second semester is not allowed.
- 5.4.2** In higher semesters, the average load is 22 credits /semester, with its minimum and maximum limits being set at 16 and 28 credits. The variation in credits depends on CGPA. This flexibility enables students (**from 3rd semester onwards**) to cope-up with the course work and helps in improving their academic performance and optimizes the learning outcome.
- 5.4.3 Contact Hours:** Considering the expectations from engineering professionals with UG, PG and Research Degrees in the 21<sup>st</sup> century, the number of contact hours for students is fixed 26-36 hours/week. This will help students in getting enough time and opportunity to do better preparation for the courses prescribed for credit, to take up self- study, to develop their creative talents and abilities and benefitting from the Add-On courses and those taken for audit. This can also enable them to get ready for challenging and exciting careers ahead. A typical example showing the calculation of contact hours based on course credits is given in Table 7:

**Table 7: Typical Course Load per semester**

No. of	Credits of	Total	Contact
Regular Course-1	3:0:0	3	3
Regular Course-2	3:0:0	3	3
Course with Tutorial-1	3:1:0	4	5
Course with Tutorial-2	3:1:0	4	5
Integrated Course -1	3:0:1	4	5
Integrated Course-1	3:0:1	4	5
Non-Credit Mandatory Course	2Unit	-	2
Total		22	2

- 5.4.4** A student shall be permitted to **re-register** for additional credits (courses awarded with W-Grade/F-Grade), limiting to a maximum of **28 credits**, from **third semester** onwards. This is subject to the following conditions:
- The student has secured a CGPA  $\geq 7.0$
  - The student doesn't have more than two backlogs from the previous semesters
  - The student shall ensure that there is no overlapping in time-table for the period and obtain concurrence from the Proctor, subject to the course being offered during the semester.
  - The student shall submit a copy of documentary evidence in respect of the above (a,b,c) while seeking approval from the concerned HOD.
  - It is mandatory and responsibility of the student to ensure all the above conditions (a to d) are met for registering additional courses over and above the prescribed credits in a semester, otherwise the registrations for the additional courses shall deemed to be cancelled.



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**5.4.5** A student shall be permitted to **register** for additional credits (limiting to a maximum of 28 credits), from **fifth semester** onwards. This is to enable fast learners take few courses of higher semesters. This is subject to the following conditions:

- a) The student has secured a CGPA  $\geq 8.5$
- b) The pre-requisite (if any) for the said course is completed.
- c) The student doesn't have any pending courses (courses with F-Grade/ W-Grade/ transitional Grades/Dropped Courses) from the previous semesters
- d) The student shall ensure that there is no overlapping in time-table for the period and obtain concurrence from the Proctor, subject to the desired course being offered during the semester.
- e) The student shall submit a copy of documentary evidence in respect of the above (a,b,c,d) while seeking approval from the concerned HOD.
- f) It is mandatory and responsibility of the student to ensure all the above conditions (a to e) are met for registering additional courses over and above the prescribed credits in a semester, otherwise the registrations for the additional courses shall deemed to be cancelled.

#### **5.5 Course load in Supplementary Semester:**

The Supplementary semester is provided for helping students who have failed in their examinations. The Supplementary semester is provided to help the student to avoid losing an academic year.

The department / College may offer some courses based on the availability of resources in hand. It is the discretion of the department / College whether to offer the Supplementary semester or not. Supplementary semester is a special semester and the student cannot demand it as a matter of right.

During the supplementary semester, a student is permitted to re-register for course(s) where he/she has secured F-Grade/ W-Grade (new courses/courses dropped during the regular semester are NOT allowed for registration during the Supplementary semester). A student is permitted to re-register for the maximum of **14 credits**. All courses are not offered. A student has to opt from those offered by the department in a given Supplementary semester.

The student has to pay a special fee prescribed by the College to register for a course in the Supplementary semester.

#### **5.6 The Proctor System:**

The college has a well-organized Proctor System, effective examinations/assessment system and a comprehensive Academic Calendar prescribing specific dates for each activity (as in Table 1), for good success in realizing the flexibilities.

- (i) The college has a Faculty Advisory System (Proctoring system) is to help the students to complete their studies successfully & comfortably. A faculty is called as proctor and the student as proctee. Each Faculty Advisor/Proctor is assigned a group of students. The functions of the Proctor is to:



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- Advise the students in the group on all academic matters (like registration of courses, dropping of courses and/or withdrawing from courses),
  - Monitor the students' in the group for their individual academic performance,
  - Identify students in the group who are slow, average or fast learners to help them pace their studies /learning at the College based on their individual abilities, and
  - Serve as a friend, philosopher and guide to all of them in the group during their studentship at the College.
- (ii) With the Proctor in place, a student to be normally permitted to register for the average course load in the first semester. And, based on the performance in the semester and faculty advice, he/she to continue with this load (for average and fast learners) or to reduce it to the minimum permissible (for slow learners) by dropping of/withdrawing from some course(s)/credits before the dates prescribed for these. This facility to assist the student to pace the course work, minimize the chances of failure in the course(s) and optimize the learning process.
- (iii) The student's performance in the first year forms the basis for faculty advice on the number of credits to be registered from the third semester onwards (within the minimum/maximum limits of 16 to 28 credits). Further faculty advice and close monitoring to help a slow learner to pace the course work properly by reducing the course load, if required and to minimize the chances of failure in the semester.
- (iv) The above experience to enable any student to properly plan his/her course load in each succeeding semester, by fixing it to be more than or equal 16 credits and less than or equal to 28 credits based on faculty advice and his/her academic performance in the previous semester. Faculty advice to be also useful to the student in identifying appropriate elective courses.
- (v) This experience is to also help fast learners (or outstanding students) to accelerate their programmes by registering and maintaining up to the maximum (equal to 28 credits) course load in each succeeding semester based on their performance in the preceding and the current semesters. Such students to be able to complete the credit requirements of the programme in a shorter time, like 7 semesters in the case of B.E./B. Tech. as example, and use the time towards Value Added Courses or for internship.
- (vi) Similarly, slow learners to register only for the minimum (equal to 16) number of credits in each succeeding semester and strive to maintain good performance in all the courses registered and complete the total requirements for the programme at a slower pace, say 9 to 10 semesters in all, in the case of B.E./B. Tech. as example.
- (vii) The number of credits earned by a student during the semester/year and Semester Grade Point Average (SGPA) as well as the Cumulative Grade Point Averages (CGPA) shall serve as performance indices to determine the standards as given in the Regulations later.

#### **Expected Outcome of the proctor system:**

Reduce the failure rate, motivate the students & improve the overall performance and quality of the student.



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### 6. Curriculum Framework:

#### 6.1 General Issues:

- (a) Curriculum Framework is important in setting the right direction for a Degree/ Diploma/Certificate programme by the College, as it takes into account the type and quantum of knowledge necessary to be acquired by a student to qualify for a particular award in his/her chosen branch or specialization area.
- (b) Besides, this also helps in assigning the credits for each course, sequencing the courses semester-wise and finally arriving at the total number of courses to be studied and the total number of credits to be earned by a student to fulfill the requirements for the conferment. The College takes into account the AICTE Model Curricula notified from time to time and follow them so as to be abreast of the national trends in this connection.
- (c) At the time of graduation, the minimum expected skills in every graduating engineer, for global acceptance is defined by NBA, through the Programme Outcomes (POs). The POs are primarily developed through the curriculum, the Course Outcomes (COs) of various courses of the curriculum. Hence, the expected skills to be developed through the POs forms an important factor during curriculum design.
- (d) Another guiding factor for curriculum design is to ensure it meets global standards, which are defined through the expectations and the competencies that need to be addressed for every engineering discipline through the Programme Specific Criteria (PSC) recommendations by Accreditation Board for Engineering and Technology (ABET). This has to be addressed through the Core Courses of the curriculum as every graduating engineer shall possess the expected core competency.

#### 6.2 Curricular Components:

The curriculum includes various curricular components as listed below, with recommended credits (minimum and maximum) for each component, and is dependent on the degree to be awarded:

- Humanities and Social Sciences including Management Courses (**HS**);
- Basic Sciences Courses (**BS**) (Mathematics, Physics, Chemistry, Biology);
- Engineering Sciences Courses (**ES**) (Materials, Workshop, Drawing, Computers);
- Professional Core Courses (**PC**), relevant to the chosen specialization/ branch;
- Professional Electives Courses (**PE**), relevant to the chosen specialization/ branch;
- Open Electives Courses (**OE**), from other technical and/or emerging subject areas, including Sciences and Management;
- Group Elective (**GE**), offered for a few programmes
- Group Core (**GC**), offered for a few programmes
- Project(s) (**PW**) and Seminar (**SR**)
- Internship (**IN**) in Industry, Academic Institution or elsewhere.
- Non-credit Mandatory Courses (**NC**)

Curriculum includes few elective courses offered through MOOCs under the guidance of the faculty in-charge, who shall be responsible for conducting the required CIE and SEE.



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#### 6.3 B.E. Degree Programme:

The Curriculum Framework for a B.E. Degree programme includes various curricular components as listed Section 6.2, and complies with recommended ranges by AICTE and VTU. The BE programme includes courses from Basic Sciences (BS), Engineering Sciences, (ES), Professional Core (PC), Professional Elective (PE), Humanities and Social Sciences (HS), Open Electives (OE), Project work(s) (PW), Seminar (SR) and non-credit mandatory courses (NC). In addition the BE programme, includes the following:

(a) **Induction Programme:** As per the requirements of AICTE in its Model UG Curriculum (February 2018), a three-week Induction Programme for the first-year B.E./B. Tech. students at the beginning of their First Semester is included

(b) **Internship**

The scheme also includes Internships that needs to be taken up during summer/winter semester breaks, and are assessed through seminar and report submitted during the Odd/Even semester.

(c) **Allocation of Credits for B.E. Degree Programme:** Looking at the UG Engineering Degree programmes practiced at leading institutions in India and abroad and the need for Indian engineering professionals to be able to meet the 21<sup>st</sup> century challenges, the breakdown of coursework as given in Table 8. It is expected that this breakdown leads to a highly useful and respectable B.E. Degree programme under the University.

**Table 8: Typical Credits distribution for the B.E programme**

Course Category (Abbreviation)	Percentage Credits		Typical credits
	Minimum	Maximum	
Humanities, Social Sciences and	5	10	12
Basic Sciences Courses (BS)	10	20	28
Engineering Science Courses (ES)	10	20	24
Professional Core Courses (PC)	30	40	56
Professional Elective Courses(PE)	10	15	18
Open Elective Courses(OE)	5	10	12
Project Work(s) (PW)			20
Seminar(s) (SR)	10	15	2
Internship(s) (IN)			3
Non-Credit Audit Courses (NC)	2	6	6 Units
Total			<b>175</b>
The above is based on the VTU guidelines (2018), and the AICTE Model Curriculum			

(d) **Non-credit Mandatory Courses:** The UG Degree programmes also require the inclusion of certain courses for overall personality development. Such courses shall not carry any credit for the award of the Degree. But, a pass in each such course during the programme shall be a necessary requirement for the student to qualify for the Degree. Hence, the UG programme includes Mandatory Courses as suggested by the respective BOS, and to include the student's performance (like, Pass or No-Pass) in such course(s) in his/her transcript. These courses are evaluated based on the performance in



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the CIE (and do not have the SEE component). Sample non-credit mandatory courses are listed below in Table 9A offered at the Institution level, while Table 9B, includes sample non-credit elective Courses and is decided by the respective BOS:

**Table 9A: Sample Non-credit Mandatory Courses for B.E. programme**

<b>SNo.</b>	<b>Mandatory Courses for BE programme (both regular and lateral entry students) for a maximum of two hours/week/semester</b>
1	Functional English
2	Kannada Language
3	Constitution of India and Professional Ethics
4	Environmental Studies
5	Personality Development and Communication

**Table 9B: Sample Non-credit Elective Courses for B.E. programme**

<b>SNo.</b>	<b>Elective Courses for BE programme for a maximum of two hours/week/semester</b>
1	Human Values through Indian Literature
2	Yoga for beginners
3	Physical Education / Sports
4	Fine Arts
5	Sanskrit language
6	Foreign Language (French/ German/ Spanish/ any other)
7	Media Communication

#### **Additional Mandatory Courses for lateral entry BE students**

In addition to the non-credit mandatory courses for regular BE students, the lateral entry students shall take up the following two non-credit mandatory bridge courses in Mathematics (one in 3<sup>rd</sup> semester and one in 4th semester) courses as listed in Table 10. The student shall pass the following non-credit mandatory/HSS courses for the award of the degree and must clear these bridge courses before advancing to the 7th semester of the programme.

**Table-10: Additional Mandatory Courses for lateral entry**

<b>S.No.</b>	<b>Additional Mandatory Courses for Lateral Entry Students of BE Programme</b>
1	Dip-Mathematics-1
2	Dip-Mathematics-2

**(e) Sequencing of Courses for B.E. Degree:** The above breakdown of the B.E. Degree curriculum shall form the basis for proper sequencing of the coursework for the programmes. Based on this, a typical sequencing plan for coursework for B.E. Degree programme is given in Table 11. College also takes into account the provisions in the AICTE Model Curriculum while



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finalizing the sequencing of courses.

**Table 11: Typical sequencing of curricular components for the B.E programme**

Semesters	Course Categories
I –II	<ul style="list-style-type: none"> <li>• HS, BS and ES, Common for all Programmes as per AICTE Model Curriculum.</li> <li>• N C and Mandatory Induction Programme (3 weeks).</li> </ul>
III-IV	<ul style="list-style-type: none"> <li>• PC: In two/three groups (like Circuit, Non-Circuit).</li> <li>• HS, BS and ES, Common for all Programmes (to be continued).</li> <li>• Also, NC (to be continued, if required).</li> <li>• Area-wise Orientation, Add-On Courses.</li> </ul>
V-VI	<ul style="list-style-type: none"> <li>• PC/PE/OE, Core and Electives.</li> <li>• Branch-wise Orientation, Add-On Courses, Seminar, Internship.</li> </ul>
VII-VIII	<ul style="list-style-type: none"> <li>• PE/OE, Electives, Project work (PW), Dissertation.</li> <li>• Add-On Courses, Seminar, Final wrap-up of Programme.</li> </ul>

#### 6.4 PG Degree Programmes

**6.4.1 M.Tech. Programmes:** The College offers PG programmes in Engineering leading to M. Tech, degree. Typical allocation of credits for the programme is given in Table 12. Here, hard core includes all compulsory Courses, whereas soft core covers a choice to be made from among the suggested compulsory Courses. The credit range for each category is based on the guidelines from the University (2018) and the AICTE model curriculum (2018).

**Table 12: Typical Credits distribution for the M.Tech. Programme**

Course Category	Percentage (%) of total Credits		Typical Credits
	Minimum	Maximum	
Institute Core Courses (IC)	15	30	2
Programme Core Courses (PC)			24
Programme Electives (PE)	25	35	20
Open Electives (OE)			4
Project Work (PW)	30	45	28
Seminar (SR), Industrial Internship/ Field Work (NT)	05	10	10
Non-Credit Mandatory Course			4 Units
Total			<b>88</b>

In view of the enhanced focus on Research for MTech, programmes, it is recommended that the Project work leads to a Research publication in a reputed Journal/Conference or the filing of patent/design with the patent office, or, the start-up initiative with a sustainable and viable business model accepted by the incubation center of the college together with the formal registration of the startup.



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**6.4.2 M.B.A Programme:** The College offers the PG programme in Master of Business Administration (M.B.A.), with credit distribution among various curricular components as given in Table 13. The MBA programme includes courses from Professional Core (PC), Functional Electives (FE), Cross Functional Electives (XE), Humanities and Social Sciences (HS), Project (PJ), Seminar (SR) and non-credit mandatory courses (NC).

**Table 13: Typical Credits distribution for the M.B.A. programme**

Course Category	Percentage Credits		Typical credits
	Minimum	Maximum	
Programme Core Courses (Hard/Soft) (PC)	45	60	52
Humanities and Social Sciences (HS)			06
Functional Electives (Specialization) (FE)	20	35	18
Cross Functional Electives (XE)			06
Seminar (SR)	02	10	04
Project Work (PW)	10	25	10
Internship/ Field Work (IN)			04
Non-Credit Mandatory Course			2 Units
<b>Total</b>			<b>100</b>

It is recommended that the Project work of the M.B.A. programme, leads to a Research publication in a reputed Journal/ Conference, or, the start-up initiative with a sustainable and viable business model accepted by the incubation center of the college together with the formal registration of the startup.

**6.4.3 M.C.A. Programme:** The College offers the PG programme in Master of Computer Applications (M.C.A.), with credit distribution among various curricular components as given in Table 14.

**Table 14: Typical Credits distribution for the M.C.A. programme**

Course Category	Percentage Credits		Typical Credits
	Minimu	Maximu	
Programme Core Courses (Hard/Soft) (PC)	40	55	60
Humanities and Social Sciences (HS)			8
Electives (Specialization/Humanities/other)	20	35	28
Seminar (SR)	02	10	06
Project Work (PW)	20	35	21
Industrial Internship (IN)			09
Non-Credit Mandatory Course (NC)			3 Units
<b>Total</b>			<b>132</b>

It is recommended that the Project work of the M.C.A. programme, leads to a Research publication in a reputed Journal/ Conference or the filing of patent with the patent office, or, the start-up initiative with a sustainable and viable business model accepted by the incubation center of the college together with the formal registration of the startup.



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**6.5 Coursework of Research Degree Programmes:** The college offers M. Sc. (Engineering by Research) and Ph.D. programmes. *For details, refer to the exclusive Academic Rules & Regulations for Research Programmes.*

#### 7. Assessment:

##### 7.1 Achievement Testing through CIE and SEE:

- (a) The assessment of students' performance in course work during and/or at the conclusion of a programme has to be done using examinations. In general, an examination addresses different objectives, like achievement-testing, prediction-testing, endurance-testing, creativity-testing and testing for ranking.
- (b) In technical education, the assessment has to be preferably of the achievement- testing type, so that a student's knowledge, understanding and competence in the courses studied are properly assessed and certified. The Regulations given below enable the Autonomous Colleges to achieve this goal and gain the confidence and respect of their stake holders, particularly students. Typically achievement- testing is done in two parts as follows, both of them being important in assessing a student's achievement:
  - **Sessional:** Involving **Continuous Internal Evaluation (CIE)**, to be conducted by the course instructor all through the semester. This includes mid-term tests, weekly/ fortnightly class tests, homework assignments, problem solving, group discussions, quiz, seminar, mini-project and other means.
  - **Terminal**, covering **Semester End Examinations (SEE)**, to be conducted by the course instructor jointly with an external examiner at the end of a semester, on dates to be fixed at the College level. This includes a written examination for theory courses and practical/design examination with built-in oral part for laboratory/design courses.
- (d) Both CIE and SEE being equally important in judging the coursework performance of students, they need to be conducted with equal rigour and equal seriousness in the credit system. This makes it necessary that both of them are assigned equal (50:50) weightage. And, a student's performance in coursework shall be judged by taking into account the results of both CIE and SEE individually and also together by giving equal weightage for them. This practice is followed for all courses offered and for all programmes.
- (e) **Two Tests are Compulsory** and sum of the two tests, along with the scores obtained in the quizzes/AAT shall be considered for computing the final CIE of a student in a given course

The TESTs/quizzes/ AAT shall be conducted by the course faculty with due approval from the HOD. Advance notification for the conduction of Quiz/AAT is mandatory and the responsibility lies with the concerned course faculty.

**Compensatory Test:** A Compensatory Test will be provided to those students who are having satisfactory attendance, course-wise but remained absent for the TEST due to a



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valid/unavoidable circumstances with prior permission OR aim for improvement in the CIE component of the course.

The purpose of conducting internal assessments is to ensure continuous evaluation and measure continuous learning. Hence, the Compensatory Test is conducted purely to address genuine student cases. Hence, only ONE Compensatory Test will be conducted by the course faculty which includes the portion of both internal tests (portion of Test-1 and Test-2) during the period indicated in the Academic Calendar.

#### 7.2 Question Papers:

(a) **Question Paper Pattern:** For an effective achievement testing of students in a course, a good question paper needs to be used as the principal tool. This makes it necessary for the question papers used at CIE and SEE to;

- Cover all sections of the course syllabus uniformly.
- Be unambiguous and free from any defects/errors.
- Emphasize knowledge testing, problem solving and quantitative methods.
- Contain adequate data/ other information on the problems assigned, and
- Have clear and complete instructions to the candidates.

(b) **Question Paper Planning:** The above requirements make it necessary for a Question Paper to cover the entire syllabus, with a provision for the students to answer questions from the whole syllabus. As students need to be given some choice in the questions included in the Paper, it is necessary for the Question Papers at SEE, in particular, to have built in choice under each module of the syllabus. This factor shall be taken note of and strictly followed by each Autonomous College, while planning of the Question Papers.

(c) Besides, it is also necessary for the Course syllabi to be drafted properly, be defect-free and also properly given in modular form to enable the setting of good question papers covering the whole syllabus. These aspects have to be taken into account, in particular, by the Boards of Studies.

(d) **Typical Question Paper:** The questions to be included in the Question Papers at CIE and SEE can be of two types as follows and the course instructors as well as the external examiners shall have to be well trained/experienced to set them.

- Multiple Choice Question, having each question to be answered by tick marking the correct answer from the choices (commonly four) given against it. Such a question paper to be useful in the testing of knowledge, skills, comprehension, application, analysis, synthesis, evaluation and understanding of the students. CIE to include questions of this type through quiz or other assessments.
- Comprehensive Questions, having all questions of the regular type to be answered in detail. Such a Question Paper to be useful in the testing of overall achievement and



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maturity of the students in a course through long questions relating to theoretical/practical knowledge, derivations, problem solving, modeling, simulation, design, application and quantitative evaluation. Questions of this type are included in both CIE and SEE.

- **CIE:** The CIE shall be conducted exclusively by the course instructor. The instructor to spell out the components of CIE to the students in advance, maintain transparency in its operation, declare the evaluation results in time and then return the answer scripts and assignment sheets to them as soon as possible. The instructor to also solve the questions from these test papers during tutorial sessions for the benefit of all the students concerned, especially slow learners.

### 7.3 Assessment patterns for CIE:

The CIE shall be conducted by the faculty/teacher handling the Course. It is the responsibility of the faculty handling a course to spell out the teaching/assessment pattern of the CIE such as test, quiz, assignment, seminar, term paper, open ended experiments, mini-projects, two minute videos, MOOCs etc. and also the necessary rubrics to students well in advance. The faculty shall maintain transparency, announce the CIE results well in time.

#### Components in a course:

Each course consists of three components namely, Theory (Lecture and tutorial), and Practical. A given course is classified based on the combination of one or more of these components.

#### Types of Courses:

There are two types of courses – Regular/normal and integrated courses

1. **Regular/normal Course** is a course which has only one component i.e., theory or practical
2. **Integrated Course** is a course which has both theory and practical components

#### Alternative Assessment Tool (AAT):

In order to encourage innovative methods while delivering a course, the faculty members have been encouraged to use the Alternative Assessment Tool (AAT). Thus AAT enables faculty to employ innovative methods and design own assessment patterns during the CIE. However, the usage of AAT is completely optional. The AAT enhances the autonomy (freedom and flexibility) of individual faculty and enables them to create innovative pedagogical practices. If properly applied, the AAT converts the classroom into an effective learning space. Some possible AAT are: seminar/ assignments/term paper/ open ended experiments/ mini-projects/ concept videos/ partial reproduction of research work/ oral presentation of research work/ group activity/ developing a generic tool-box for problem solving/ report based on participation in create-a-thon/ make-a-thon/ code-a-thon/ hack-a-thon conducted by reputed organizations/ any other.



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However, it is mandated for a faculty to announce the AAT in the respective class before the commencement of a course.

#### 7.3.1 ASSESSMENT PATTERNS for BE/MBA/MCA programmes including AAT.

##### (a) Assessment pattern for Regular/Normal courses:

The weightages of various components of CIE for **regular/normal courses** considering weightage of up to **20% to Quiz/AAT** i.e. 10 out of 50 marks are shown in the Table 16. Both CIE and SEE have equal (50:50) weightage. Student's performance in a course shall be judged by taking into account the results of CIE and SEE individually and also together. **Table-16:** Typical distribution of weightage for CIE & SEE for Regular Courses.

Component		Marks	Total Marks
CIE	Internals-I	20	50
	Internals-II	20	
	Quiz-I/ AAT	5	
	Quiz-II/ AAT	5	
SEE	Semester End Exam	50	50
Total Marks			100

If AAT is employed, the concerned teacher shall prescribe the pattern of assessment prior to commencement of the classes.

##### (b) Assessment pattern for Integrated Courses:

The weightages of various components of CIE for integrated courses considering weightage of **20% to Quiz / AAT** i.e. 10 out of 50 marks are shown in the Table 17.

**Table-17:** Typical distribution of weightage for CIE & SEE for Integrated Courses

Component		Marks	Total Marks	
CIE	Theory	Internals-I	10	50
		Internals-II	10	
		Quiz-I/ AAT	5	
	LAB	Continuous performance and Record	10	
		Test	10	
		Viva-voce/AAT	5	
SEE	Semester End Exam	50	50	
Total Marks			100	

If AAT is employed, the concerned teacher shall prescribe the pattern of assessment prior to commencement of the classes



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**Note: Students shall secure a minimum of 40% in CIE and should have 85% attendance.** In case of integrated courses, a student must secure a minimum of 40% marks and 85% attendance in both theory and practical components. In addition, the overall CIE marks including theory and practical components shall not be less than 40%.

#### 7.3.2 ASSESSMENT PATTERNS for M.Tech. programmes

The Programme Outcomes of the M.Tech. programme have enhanced focus on Research, together with a need to demonstrate mastery in the area of specialization. Hence, flexibility is provided to the course faculty to evolve innovative methods for evaluation through the Course and its assessments. Both CIE and SEE have equal (50:50) weightage. Student's performance in a course shall be judged by taking into account the results of CIE and SEE individually and also together, as shown in Table 18.

**Table-18:** Typical distribution of weightage for CIE & SEE for M.Tech. Programmes

Component		Range of Marks	Total Marks
CIE	Internals-I	15-20	50
	Internals-II	15-20	
	Flexible Assessment Component: Design of Experiment/ Implementation of Research Paper/ Literature Review/Modelling a given system/Validating a given system/ Building a system/Oral Seminar/ Mini-Project/ Video submission/ Term Paper/any other	10-20	
SEE	Semester End Exam	50	50
Total Marks			100

#### 7.4 Semester End Examinations:

**(a) Maintenance of Standards:** For ensuring a high standard in both CIE and SEE fully meeting the provisions of the University Statutes and being able to declare the results of students' performance at both these in a time bound manner as per their Academic Calendars, each Autonomous College follows the suggestions given below for conducting the examinations:

- **SEE:** The SEE shall be conducted jointly by the course instructor and an external examiner appointed for this purpose by the Autonomous College. Here, the external examiner to mainly associate with the work of Question Paper setting, because of the difficulties in having him/her for conducting the evaluation of students' answer scripts due to the tight time schedule for the various tasks connected with SEE, as covered below.



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- **SEE Answer Scripts:** The answer scripts of SEE shall be normally evaluated by the course instructor only. But as a healthy step, a Departmental Committee at each Autonomous College to preferably oversee this task and ensure the quality and standard of evaluation and also of the grades awarded in all the cases. The next step to be taken before declaring the results, to include an external review of the SEE conducted.
  - **External Review of SEE:** An external review shall be conducted under the aegis of the Board of Studies/Board of Examiners of the Autonomous College by appointing a panel of experts from outside the College for this purpose aiming at a complete review of SEE operation in the College. This shall include such steps as, question paper review, checking random samples of answer scripts, analysis of results/grades awarded and other related aspects. This step to be also necessary for gaining the confidence of the University and of the society at large, on the fairness, transparency and acceptability of the examination practice among the stakeholders.
- (b) **Attendance Standards:** All students of Autonomous Colleges under the University shall maintain a minimum attendance of 85% in each course registered. In case of any short fall in this, the Academic Council of the College shall consider the same and shall condone the deficiency in special cases up to 10%. Any student failing to meet the above standard of attendance in any course(s) registered shall not be allowed to appear for SEE of such course(s).
- (c) **Attendance at CIE and SEE:** Attendance at all examinations, both CIE and SEE of each course registered shall be compulsory for the students and there shall not be any provision for re-examinations. Any student against whom any disciplinary action by the College/University is pending shall not be permitted to attend any SEE in that Semester.
- (f) **Passing Standards:** High standards shall be maintained in all aspects of the examinations at Autonomous Colleges under the University. For this purpose, each Autonomous College shall follow the standards of passing at CIE and SEE for each Course, registered, as given in Tables 15.

**Table 15: Passing Standards at Colleges using Absolute Grading**

Evaluation Method	Passing Standard
Sessional (Continuous Internal Evaluation)	Score: $\geq 40\%$
Terminal (Semester End Examination)	Score: $\geq 40\%$

- (g) **Project work Evaluation:** The evaluation of CIE of the project work shall be based on the progress of the student in the work assigned by the project supervisor periodically evaluated by him/her together with a Project Evaluation Committee (PEC) constituted for this purpose by the department.

PEC comprises two faculty of the department/programme-wise and one faculty supervisor/Project guide (as assigned by the department for every student/student group).



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Seminar presentation, project report (dissertation) and final oral examination conducted by a common Project Evaluation Committee at the College level shall form the SEE of the project work.

The evaluation of **SEE** of the project work shall be jointly conducted by the Project Guide and an External examiner.

#### **(h) Plagiarism index for Project report/Thesis:**

All project reports shall go through the plagiarism check and the plagiarism index has to be less than 20%.

A proportionate reduction of marks when the plagiarism check and the plagiarism index is between more than 20% and less than 40%.

Thesis/Project reports with plagiarism more than 40% and less than 60% shall be asked for resubmission within a stipulated period of six months.

Thesis/Project reports with plagiarism more than 60% shall be rejected.

**(g)** In the case of other requirements, such as seminar, industrial internship, field work, comprehensive viva voce, if any, the assessment shall be made as laid down by the Academic Council of the College.

**(h) There shall be no re-examination for any Course in the credit system** to take care of such students:

- Who have absented themselves from attending CIE or SEE without any valid reason;
- Who have failed (Grade F) to meet the minimum passing, Standard prescribed for CIE and/or SEE;
- Who have been detained for shortage of attendance in any coursework;
- Who have withdrawn (Grade W) from a Course.

Such students shall be required to re-register for the Course(s) and go through CIE and SEE again and obtain a Grade E or better in each case. While such students shall have to re-register for the same Course(s) if hard core, they can re-register for alternative Course(s) from among the soft core or elective Courses, as applicable. The re-registration shall be possible only when the particular Course is offered again either in a main (Odd/Even) or a supplementary semester.

**(i) Monitoring/Assessment for Research Degrees:** Students registered for Research Degrees shall be monitored and assessed at College level. *For details, refer to the exclusive Academic Rules & Regulations for Research Programmes.*

## 7.5 ATTENDANCE REQUIREMENT

7.5.1 All students shall maintain a minimum attendance of 85% in each course registered. In case of shortfall, the concerned **Head of the Department** shall consider and shall condone deficiency up to a limit of 10% in special cases and shall submit a list of such candidates to the office of COE. However, all the relevant documents pertaining



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to condonation of attendance shall be maintained by the respective department and produced as and when required by the Institutional authorities. **Any student failing to meet the above standard of attendance in any course(s) registered, shall not be allowed to appear for SEE of such course(s).**

- 7.5.2 **In the event of condonation, the students are not eligible for make-up examination in that course during that semester.**
- 7.5.3 Attendance at CIE and SEE: Attendance at all examinations, both CIE and SEE of each course registered shall be compulsory for the students and there shall not be any provision for re-examination/consideration.
- 7.5.4 Any student against whom any disciplinary action by the College is pending shall not be permitted to attend any SEE in that Semester.
- 7.5.5 Each Semester is considered as a unit and the candidate has to put in a minimum attendance of 85% in each course with a provision of condonation of 10% attendance for reasons such as medical emergencies and legitimate grounds.
- 7.5.6 The basis for the calculation of the attendance shall be the period prescribed by the College by its calendar of events. For the first semester students, the same is reckoned from the date of admission to the programme.
- 7.5.7 The students shall take note of his/her attendance status periodically from the respective faculty and strive to make up the shortage. However, the departments shall periodically announce the attendance status of the students. Non-receipt of such information from the college shall not be considered as valid reason for exemption from the attendance requirements.
- 7.5.8 If a student **does not fulfill the attendance requirements** in any course, he/she is not permitted to attend the Semester End Examination (SEE) in that course and is deemed to have been **awarded “F” grade** in that course (option for withdrawal is not available in such cases).

## **8. GRADING**

### **8.1 General:**

- (a) In recent years, the grading system has replaced the evaluation of students' performance in a Course based on absolute marks, because of its many advantages. Therefore, Autonomous Colleges under the University shall follow this practice. Here again, it is necessary to maintain uniformity in the grading practices at different Colleges to ensure that the migration of students or transfer of credits among Autonomous Colleges under the University is made easy.
- (b) **Letter Grades:** A letter grade is basically a qualitative measure (an alphabet/letter) giving the performance of a student, such as, Outstanding (S), Excellent (A), Very Good (B), Good



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(C), Above Average (D), Poor (E) and Fail (F), based on the raw score (marks, as in conventional practice) obtained by the student. This is usually arrived at after the student's performance in a Course, which includes both CIE and SEE, is assessed and raw score (marks) for the total are awarded to begin with, followed by grouping of all the students at a Course under different grading levels, as above.

(c) **Absolute Grading:** The College adopts the absolute grading system.

### 8.2 Grade Points:

**8.2.1** Depending on the letter grades assigned, a student earns certain grade points. As the grading system can have different scales for grade points (like 5, 8, 10.) with more number of points in the scale being desirable for providing higher resolution in the assessment. Moreover, all Autonomous Colleges under the University need to follow the same scale for uniformity in their operations. Hence, the Autonomous Colleges under the University shall follow the 10-point grading system, as given in Table 19 for both the relative grading system and the absolute grading system.

**Table 19: Grade Points Scales for both Relative and Absolute Grading**

Level	Out-standing	Excellent	Very Good	Good	Above Average	Poor	Fail
Grade	S	A	B	C	D	E	F
Grade Points	10	09	08	07	06	04	00
Score (Marks) Range	$\geq 90$	$< 90 - \geq 80$	$< 80 - \geq 70$	$< 70 - \geq 60$	$< 60 - \geq 50$	$< 50 - \geq 40$	$< 40$

**8.2.2** The grade points given in Table 12 helps in the evaluation of credit points earned by the student in a Course as the credit points are equal to the number of credits assigned to the Course multiplied by the grade points awarded to the student in that Course. This shall be used in arriving at the credit index of the student for that semester, as it is the sum total of all the credit points earned by the student for all the Courses registered in that semester.

**8.2.3 Earning of Credits:** A student shall be considered to have completed a Course successfully and earned credits if he/she secures an acceptable letter grade in the range S to E. Letter grade F in any Course implies failure of the student in that Course and no credit shall be earned.

**8.2.4 Transitional Grades:** The transitional grades, such as 'T', 'W' and 'X' shall be awarded to a student in the following cases. These grades need to be converted into one or the other of the letter grades (S-F) after the student completes his/her Course requirements, including the examinations.



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**8.2.4.1 Grade 'I':** Awarded to a student having satisfactory attendance at classes and meeting the passing standard at CIE in a Course, but remained absent from SEE for valid and convincing reasons acceptable to the College, like:

- (i) Accident or severe illness leading to hospitalization, which disables the student from attending Semester End Examination (SEE);
- (ii) A calamity in the family at the time of SEE, which requires the student to be away from the College;
- (iii) In the event of (i) and (ii) above, it is the responsibility of the student/ parent/ guardian to inform the college authorities (proctor/HOD) immediately. The information can be in the form of either written communication, personal communication by parent/guardian/peer or an e-mail or mobile message. The candidate needs to submit all the relevant evidences (hospital reports, police reports, certificates from competent authorities, etc.). Prior intimation is mandatory. **Any intimation after the conduct of examination shall not be entertained.**

**8.2.4.2 Grade 'X':** Awarded to a student having attendance  $\geq 85\%$  and CIE rating ( $\geq 90\%$ ) in a course, but SEE performance observed to be poor, which could result in an overall 'F' Grade in the Course. No 'F' Grade is awarded in this case but student's performance record is maintained separately. The student will be provided an opportunity in the make-up examination.

**8.2.4.3 Grade 'W':** Awarded to a student having **satisfactory attendance at classes ( $\geq 85\%$ )** as on the date of course withdrawal (as specified in the calendar), but withdrawing from that Course before the prescribed date in a semester under faculty advice (students who have applied for condonation of attendance are not eligible to apply for W Grade). However, the students' needs to maintain the required credit limits for the semester (minimum 16 and maximum 28 credits). All the 'W' grades awarded to the students shall be eligible for conversion to the appropriate letter grades only after the concerned students re- register for these Courses in Odd/Even/ Supplementary semester and fulfill the passing standards.

A student is not allowed to apply for course withdrawal during the Supplementary Semester.

**8.2.5 Make-up Examination:** The Make-up Examination facility shall be available to the students who have been awarded the transitional Grades (I-Grade or the X- Grade). The Make-up Examination shall be held as per dates notified in the Academic Calendar. The standard of the Make-up Examination shall be the same as that of the regular SEE for the Courses. The student will be provided an opportunity in the make-up exam. The Grade earned by the student will be retained in case of 'I' Grades, while in the case of 'X' Grades, the student will be awarded the next lower passing Grade (that is: grades ('D' to 'S') will be reduced to the next lower grade, while the Grade 'E' will remain unchanged).

**8.2.6 Grade Card:** Each student shall be issued a Grade Card (or transcript) at the end of each semester. While this shall have a list of all the Courses registered by a student in the semester together with their credits, the letter grades with grade points awarded in each case



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and those with grades 'I', 'W' and 'X', only those Courses registered for credit and having grade points shall be included in the computation of the student's performance, like SGPA and CGPA. And, the Courses taken for audit shall not form part of this computation. The results of mandatory courses, which are of the non-credit type, shall also be reflected in the Grade Card as PP (for Passed) or NP (for Not Passed). It shall be noted that each UG student shall have to obtain the grade PP in each mandatory course to qualify for the Degree award by the University.

**Note:** If a student awarded 'F' Grade in a course, and re-registers for the same course later, and applies for Course withdrawal in the same course, will be awarded 'W' Grade. However, for computation of vertical progression, the course will be treated as 'F' Grade.

### 8.3 Grade Point Averages:

- (a) **SGPA and CGPA:** The credit index can be used further for calculating the Semester Grade Point Average (SGPA) and the Cumulative Grade Point Average (CGPA), both being important academic performance indices of the student. While SGPA is equal to the credit index for a semester divided by the total number of credits registered by the student in that semester, CGPA gives the sum total of credit indices of all the previous semesters divided by the total number of credits registered in all these semesters. Both the equations together facilitate the declaration of academic performance of a student, at the end of a semester and at the end of successive semesters respectively. Thus,

#### Semester Grade Point Average (SGPA)

$$SGPA = \frac{\sum[(\text{Course Credits})(\text{Grade Points})]}{\sum[(\text{Course Credits})]}$$

considering all courses registered in that semester (including those with F Grade)

#### Cumulative Grade Point Average (CGPA)

$$CGPA = \frac{\sum[(\text{Course Credits})(\text{Grade Points})]}{\sum[(\text{Course Credits})]}$$

for all courses registered until that semester (excluding those with F Grade)

- (b) **Illustrative Example:** An illustrative example given in Table 20 indicates the use of the two equations in calculating SGPA and CGPA, Both of them shall be normally calculated up to the second decimal position, so that the CGPA, in particular, can be made use of in rank ordering the students' performance in a class at an Autonomous College. If two students get the same CGPA, the tie shall be resolved by considering the number of times a student has obtained higher SGPA. But, if it is not resolved even at this stage, the number of times a student has obtained higher grades like S, A, B, shall be taken into account in rank ordering of the students in the class.

**Table 20:** SGPA/CGPA Calculations: An Illustrative Example



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Semester (Odd:1,Even:II)	Course No.	Credits	Grade	Grade Points	Credit Points	SGPA, CGPA
I	XX101	5:0:0	B	8	40	SGPA = 117/20 = 5.85
I	XX102	3:2:0	W	-	--	
I	XX103	3:0:0	A	9	27	
I	XX104	0:1:1	F	0	00	
I	XX105	4:1:0	D	6	30	
I	XX106	5:0:0	E	4	20	
Total		20 (18*)	Total		117	
II	XX107	3:1:1	C	7	35	SGPA = 157/25 = 6.28
II	XX108	4:0:0	B	8	32	
II	XX109	3:0:0	D	6	18	
II	XX110	4:1:0	E	4	20	CGPA = 274/41 = 6.68
II	XX111	2:1:1	A	9	36	
II	XX112	2:0:0	F	0	00	
II	XX113	0:2:0	B	8	16	
Total		25 (23*)	Total		157	
Supplementary	XX102	3:2:0	D	6	30	SGPA = 56/9 = 6.22
Supplementary	XX104	0:1:1	C	7	14	
Supplementary	XX112	2:0:0	D	6	12	CGPA = 330/50 = 6.60
Total		9	Total		56	
*Total No. of credits excluding those with 'F' and 'W' grades particularly important to keep track of the number of credits earned by a student up to any semester.						

(c) **Vertical Progression:** The criteria for Vertical Progression is based on University guidelines. Hence, to facilitate the mobility of students from one College to another and to lay down uniform minimum standards for CGPA together with the minimum number of credits to be earned in an academic year, the standards for vertical progression for **all programs (BE, M.Tech., MBA and MCA)** offered by the College is as follows:

1. Based on the range of minimum and the maximum credits to be earned in an academic year (inclusive of supplementary semester, if any):

Vertical progression for **regular students** is as under:

- Eligibility for **III** semester, the student to earn a minimum of **28 credits**, subject to a maximum of **four F grades**.
- Eligibility for **V** semester, the student to earn a minimum of **60 credits**, subject to a maximum of **four F grades**.
- Eligibility for **VII** semester, the student to earn a minimum of **104 credits**, subject to a maximum of **four F grades** and cleared all courses from I/II semester (no pending courses from first year).

Vertical progression for **Lateral Entry students** is as under:



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- Eligibility for **V** semester, the student to earn a minimum of **32 credits**, subject to a maximum of **four F grades**.
- Eligibility for **VII** semester, the student to earn a minimum of **64 credits**, subject to a maximum of **four F grades**.

2. Minimum standard for CGPA = 5.0 (At the end of each academic year).

And, failure to secure a minimum CGPA = 5.0 at the end of any semester for the first time, shall attract a warning before approval of the student to continue in the following semester and such a student shall be placed on probation.

**Note:** From II year onwards, the number of maximum credits that a student can register in a semester shall be 28. In any case, the number of credits shall not be less than 16 after dropping/ withdrawal of a course/(s) in that semester.

(d) **Award of Class:** Sometimes, it is necessary to provide equivalence of these averages, viz., SGPA and CGPA with the percentages and/or Class awarded as in the conventional system of declaring the results of University examinations. This shall be done by Autonomous Colleges under the University only at one stage by prescribing certain specific thresholds in these averages for First Class with Distinction, First Class and Second Class, at the time of Degree Award. This provision given in Table 20 follows the approach of the Council for this purpose as reproduced from the AICTE Approval Process Handbook:

Grade Point	Percentage of Marks/Class
5.75	50
6.25	55
6.75	60
7.25	65
7.75	70
8.25	75

**Note:** (1) The following Formula for Conversion of CGPA to percentage of marks to be used only after a student has successfully completed the programme:

$$\text{Percentage of Marks} = (\text{CGPA} - 0.75) \times 10$$

(2) Class designation:

≥70 % (First Class with Distinction),

≥ 60 % and < 70 % (First Class),

<60 % (SecondClass).

## 9. OTHER ACADEMIC MATTERS:

### 9.1 Choice Based Credit System:

(a) It is necessary to implement a Choice Based Credit System for academic programmes at



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all the Autonomous Colleges under the University. This shall be of considerable benefit to the students for customizing their programmes of direct interest to them, developing their individual capabilities and talents and preparing them for exciting careers ahead in the 21st century.

- (b) This makes it necessary for the Autonomous Colleges to provide for:
- (i) Easy access to the Schemes of Instruction, Syllabi, Credit Structure of programmes and the Courses being conducted by all students (either in print or in electronic form) so as to assist them in course work planning.
  - (ii) Institutionalizing the conduct of course work by adopting a centralized time table for all the programmes at a College, with a view to assist the students in customizing their programmes and also optimizing the use of physical facilities.
  - (iii) Establishing a dynamic Faculty Advisory System at each College with 5-10 students assigned to an Advisor, for guiding them in planning/implementing their course work in a flexible and effective manner and also monitoring them.

### 9.2 Temporary Withdrawal:

9.2.1 A student may withdraw temporarily from the programme on grounds like, prolonged illness, grave calamity in the family or any other genuine reason. The withdrawal shall be for periods which are integral multiples of a semester, provided that:

- The student applies to the college within 6 weeks of the commencement of the semester or from the date he/she last attended the classes, whichever is later, stating fully the reasons for such a withdrawal, together with supporting documents and endorsement of his/her parent/guardian.
- The college is satisfied of the genuineness of the case and that, even by taking into account the expected period of withdrawal, the student has the possibility to complete the programme requirements within the time limits specified by the university.
- The student does not have any dues or demands at the college/university including tuition and other fees as well as library material.

9.2.2 A student availing of temporary withdrawal from the college under the above provision shall be required to pay such fees and/or charges as fixed by the College until such time as his/her name appears on the students' roll list. **However, the fees/charges once paid shall not be refunded.**

9.2.3 Normally, a student is entitled to avail **the temporary withdrawal facility only once during his/her studentship of the programme.** However, any other concession for the concerned student shall have to be approved by the Academic Council of the college. Hence, the students shall be advised by the Principal to use this provision only in exceptional cases.

### 9.3 Termination from the Programme:



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A student shall be required to withdraw from the programme and leave the Autonomous College on the following grounds:

- (a) **Successive Failures:** If a student fails (Grade F) to pass a Course and earn the credits prescribed for the Course **even after five attempts**, the admission of the student to the programme shall be terminated. However, such a student can seek admission to the programme afresh.
- (b) Failure to secure CGPA  $\geq 5.00$  on three consecutive occasions to lead the student being asked to discontinue the programme and leave the College. However,
  - Failure to secure a CGPA  $\geq 5.00$  at the end of any semester for the first time, to attract warning before approval of the student to continue in the following semester (on probation).
  - There is a provision for the rejection of total performance of a semester and re-registration for the semester. This shall be done only once in the entire course of studies.
- (c) Absence from classes for more than six weeks at a time in a semester without leave of absence being granted by the competent Authority.
- (d) Failure to meet the standards of discipline as prescribed by the Autonomous College from time to time.

#### **9.4 Students' Feedback:**

- a) The college obtains feedback from students on their course work and various academic activities conducted. The feedback is obtained on-line from the students at regular intervals maintaining confidentiality
- b) The feedback received from the students is reviewed/discussed by a committee constituted for the purpose and necessary corrective measures are taken.

#### **9.5 Recommendations for Degree Award:**

- (a) The College forwards its recommendations to the University in respect of students qualifying for UG/PG/ Research Degree Awards based on their success in the examinations/adjudication of theses as the case shall be after receiving approval from the Authorities/ Bodies of the College concerned.
- (b) The Autonomous College ensures that each such student in (a) has fulfilled all the requirements for the Degree Award.
- (c) Only those students recommended for the Degree Award shall be entitled to receive the relevant Provisional Certificates/Transcripts from the College at this stage.

#### **9.6 Graduation Ceremony:**

The College conducts annual Graduation Day ceremony for the award of Degrees to students completing the prescribed academic requirements. The Graduation Day is conducted after the University Convocation.



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The College awards Ranks and Medals to the meritorious students during the Graduation Day Ceremony to encourage the students to strive for excellence.

NOTE: Only such students who have completed the academic requirements for award of a specific degree within the normal duration (Section 4.4(a)) shall be eligible for awards.

## **10. OTHER ISSUES**

### **10.1 Quality/Standard:**

- (a) The quality/standard of engineering professionals is closely linked with the level of the technical education system. As it is now recognized that these features are essential to develop the intellectual skills and knowledge of the professionals for being able to contribute to the society through productive and satisfying careers as innovators, decision makers and/or leaders in the global economy of the 21<sup>st</sup> century, it becomes necessary that certain improvements are introduced at different stages of their education system.
- (b) These requirements include:
  - (i) Selective admission of students to a programme, so that merit and aptitude for the chosen technical branch or specialization are given due consideration.
  - (ii) Faculty recruitment and orientation, so that qualified teachers trained in good teaching methods, technical leadership and students' motivation are available.
  - (iii) Instructional/Laboratory facilities and related physical infrastructure, so that they are adequate and at the contemporary level.
  - (iv) Access to good library resources and Information and Communication Technology (ICT) facilities, to develop the student's self-learning abilities.
  - (v) Adequate opportunities and facilities for the development of the student's aptitudes and attitudes so that the professionals are conscious of social/other responsibilities.

## **11. Interpretation**

Any question as to the interpretation of these rules and regulations shall be decided by the College, whose decision shall be final and binding on the student in the matter. The College shall also have the power to issue clarifications to remove any doubt, difficulty or anomaly, which may arise in regard to the implementation of these regulations.

**:: NOTE ::**

**These rules and regulations may be altered/changed from time to time by the academic council. Failure to read and understand the rules is not an excuse.**

