
CMR COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous)
Kandlakoya, Hyderabad – 501 401

ACADEMIC REGULATIONS R 02

FOR CBCS & OUTCOME BASED B.TECH. REGULAR PROGRAMMES

(Effective for the students admitted into I year from the
Academic Year 2015-16 and onwards)

1.0 Under-Graduate Degree Programme in Engineering & Technology

CMR College of Engineering & Technology Hyderabad offers 4 Years (8 Semesters) Bachelor of Technology (B.Tech.) degree Programme, under Choice Based Credit System (CBCS), with effect from the Academic Year 2015 - 16 and onwards, in the following Branches of Engineering:

S.No.	Branch
I.	Civil Engineering
II.	Electrical & Electronics Engineering
III.	Mechanical Engineering
IV.	Electronics & Communication Engineering
V.	Computer Science & Engineering

- 1.1. The B. Tech. degree of Jawaharlal Nehru Technological University Hyderabad shall be conferred on candidates who are admitted to the program and who fulfil all the requirements for the award of the degree.

2.0 Admission Procedure

- 2.1. Admissions will be done as per the norms prescribed by the Government of Telangana. The Government orders in vogue shall prevail.

- 2.2. The candidate should have passed the qualifying examination, intermediate or equivalent.
- 2.3. Seats in each programme in the college are classified into Category–A (70% of intake), and Category-B (30% of intake) besides Lateral Entry. Category -A seats in each programme will be filled by the Convener, EAMCET Admissions. Category - B seats in each programme will be filled by the College as per the guidelines of the Competent Authority.
- 2.4. Lateral Entry seats for 20% of the candidates from the approved strength of the course shall be admitted into the II Year I Semester (III Semester) directly based on the rank secured by the candidate in Engineering Common Entrance Test (ECET) in accordance with the instructions received from the Convener, ECET / Competent Authority.

3.0 B.Tech. Programme (UG PROGRAMME) Structure

- 3.1 The B.Tech. Programme of CMR College of Engineering & Technology are of Semester Pattern, with 8 Semesters constituting 4 Academic Years, each Academic Year having two Semesters (First/Odd and Second/Even Semesters). Each Semester shall be of 22 Weeks duration (inclusive of examinations), with a minimum of 90 Instructional Days per Semester.
- 3.2 UGC/ AICTE specified Definitions/ Descriptions are adopted appropriately for various terms and abbreviations used in these Academic Regulations/ Norms, which are as listed below.

3.2.1 Semester Scheme

Each UG Programme is of 4 Academic Years (8 Semesters), with the year being divided into two Semesters of 22 weeks (≥ 90 Instructional days), each Semester having ‘Continuous Internal Evaluation (CIE)’ and ‘Semester End Examination (SEE)’. Choice Based Credit System (CBCS) and Credit Based Semester System (CBSS) as denoted by UGC, and Curriculum/ Course Structure as suggested by AICTE are followed.

3.2.2 Credit Courses

All Courses are to be registered by the student in a Semester to earn Credits. Credits shall be assigned to each Course in a L: T: P: C (Lecture Periods: Tutorial Periods: Practicals Periods : Credits) Structure, based on the following general pattern .

- One Credit - for One hour/ Week for Theory/ Lecture (L) Courses; and,
- One Credit - for Two hours/ Week for Laboratory/ Practical (P) Courses or Tutorials (T).

Other student activities like NCC, NSS, NSO, Study Tour, Guest Lecture etc., and identified Mandatory Courses will not carry Credits.

3.2.3 Course Classification

All Courses offered for the UG Programme are broadly classified as

- Foundation Courses (Fn C),
 - Core Courses (Co C), and
 - Elective Courses (El C).
- **Foundation Courses** (Fn C) are further categorized as
 - HS (Humanities and Social Sciences)
 - BS (Basic Sciences)
 - ES (Engineering Sciences)
 - **Core Courses** (Co C) and **Elective Courses** (El C) are categorized as PS (Professional Courses), which are further subdivided as –
 - PC (Professional Core) Courses
 - PE (Professional Electives)
 - OE (Open Electives)
 - Project Works (PW)
 - **Minor Courses** (1 or 2 Credit Courses, belonging to HS/ BS/ ES/ PC as per relevance); and
 - **Mandatory Courses** (MC - Non-credit oriented).

3.2.4 Course Nomenclature:

The Curriculum Nomenclature or Course-Structure Grouping for the each of the UG PROGRAMME E&T (B.Tech. Degree Programmes), is as listed below:

Broad Course Classification	Course Group/ Category	Course Description	Range of Credits
Foundati on Courses (Fn C)	BS – Basic Sciences	Includes - Mathematics, Physics and Chemistry Courses	15% to 20%
	HS – Humanities and Social Sciences	Includes Courses related to Humanities, Social Sciences and Management	5% to 10%
	ES - Engineering Sciences	Includes fundamental engineering Courses	15% to 20%
Core Courses (Co C)	PC – Professional Core	Includes core Courses related to the Parent Discipline/ Department/ Branch of Engg.	30% - 40%
Elective Courses (El C)	PE – Professional Electives	Includes Elective Courses related to the Parent Discipline/ Department/ Branch of Engg.	10% to 15%
	OE – Open Electives	Elective Courses which include inter-disciplinary Courses or Courses in an area outside the Parent Discipline/ Department/ Branch of Engg.	5% to 10%
Project Work	Project Work	B.Tech. Project or UG Project or UG Major Project	10% to 15%
	Industrial Training/ Mini- Project	Industrial Training/ Internship/ UG Mini-Project/ Mini-Project	
	Seminar	Seminar/ Colloquium based on core contents	

		related to Parent Discipline/ Department/ Branch of Engg.	
	Comprehensive Viva-Voce	Comprehensive Viva-Voce	
	Minor Courses	1 or 2 Credit Courses (subset of HS)	-
	Mandatory Courses (MC)	Mandatory Courses (non-credit)	included
	Total Credits for B. Tech. Programme		192 (100%)

4.0 Course Work

- 4.1** A student, after securing admission, shall pursue the B.Tech. UG Programme in a minimum period of 4 Academic Years, and a maximum period of 8 Academic Years (starting from the Date of Commencement of I Year).
- 4.2** Each student shall Register for and Secure the specified number of Credits required for the completion of the UG Programme and for Award of the B.Tech. degree in the respective Branch of Engineering.
- 4.3** Each Semester is structured to provide 24 Credits, totaling to 192 Credits for the entire B.Tech. Programme.

5.0 Course Registration

- 5.1** A 'Faculty Advisor or Counselor' shall be assigned to each student, who will advise the student about the UG Programme, its Course Structure and Curriculum, Choice/Option for Courses, based on his competence, progress, pre-requisites and interest.
- 5.2** Academic Section of the College invites 'Registration Forms' from students apriori (before the beginning of the Semester), through 'on-line submissions', ensuring 'DATE and TIME Stamping'. The On-line Registration Requests for any 'Current Semester' shall be completed before the

commencement of SEEs (Semester End Examinations) of the 'Preceding Semester'.

- 5.3** A Student can apply for On-Line Registration, only after obtaining the 'Written Approval' from his Faculty Advisor, which should be submitted to the College Academic Section through the Head of Department (a copy of the same being retained with Head of Department, Faculty Advisor and the Student).
- 5.4** A Student may be permitted to Register for his Course(s) of choice with a typical total of 24 Credits per Semester (Minimum being 20 Credits and Maximum being 28 Credits) based on his progress and SGPA/ CGPA, and completion of the 'Pre-Requisites' as indicated for various Courses, in the Department Course Structure and Syllabus contents. However, a minimum of 20 Credits per Semester must be registered to ensure the 'studentship' in any Semester.
- 5.5** Choice for 'additional Courses' to reach the Maximum Permissible Limit of 28 Credits (above the typical 24 Credit norm) must be clearly indicated, which needs the specific approval of the Faculty Advisor/ Counselor.
- 5.6** If the Student submits ambiguous choices or multiple options or erroneous entries - during On-Line Registration for the Course(s) under a given/ specified Course Group/ Category as listed in the Course Structure, such discrepancy if any will be considered and disposed by the Head of the Department.
- 5.7** Course Options exercised through On-Line Registration are final and cannot be changed/ inter-changed; further, alternate choices will also not be considered. However, if the Course that has already been listed for Registration (by the Head of Department) in a Semester could not be offered due to any unforeseen or unexpected reasons, then the Student shall be allowed to have alternate choice - either for a new Course (Course to offering of such a Course), or for another existing Course (Course to availability of seats), which may be considered. Such alternate arrangements will be made by the Head of Department, with due notification and time-framed

schedule, within the first week from the commencement of Class-work for that Semester.

Dropping of Courses may be permitted, only after obtaining prior approval from the Faculty Advisor (Course to retaining a minimum of 20 Credits), 'within one week of time' from the beginning of the current Semester.

- 5.8** For Mandatory Courses like NCC/ NSS/ NSO etc., a 'Satisfactory Participation Certificate' from the concerned authorities for the relevant Semester is essential. No Marks or Grades or Credits shall be awarded for these activities.

6.0 Courses to be offered

- 6.1** A typical Section (or Class) Strength for each Semester shall be 60.

- 6.2** An elective Course may be offered to the Students, ONLY IF a Minimum of 20 Students ($\frac{1}{3}$ of the Section Strength) opt for the same. The Maximum Strength of a Section is limited to 80 ($60 + \frac{1}{3}$ of the Section Strength).

- 6.3** More than one teacher may offer the same Course (Lab./ Practicals may be included with the corresponding Theory Course in the same Semester) in any Semester.

- 6.4** If more entries for Registration of a Course come into picture, then the concerned Head of Department shall take necessary action, whether to offer such a Course for TWO (or multiple) sections or NOT .

- 6.5** In case of options coming from Students of other Departments/ Branches/ Disciplines (not considering open electives), priority shall be given to the student of the 'Parent Department' first.

7.0 Attendance Requirements

- 7.1** A student shall be eligible to appear for the Semester End Examinations, if he acquires a minimum of 75% of attendance in aggregate of all the Courses (excluding Non-Credit Courses) for that Semester.

- 7.2** Condoning of shortage of attendance in aggregate up to 10% (65% and above, and below 75%) in each Semester may be granted by the College Academic Committee on genuine and valid grounds, based on the student's representation with supporting evidence.
- 7.3** A stipulated fee shall be payable towards condoning of shortage of attendance.
- 7.4** Shortage of Attendance below 65% in aggregate shall in NO case be condoned.
- 7.5** Students, whose shortage of attendance is not condoned in any Semester, are not eligible to take their End Examinations of that Semester, they get detained and their registration for that Semester shall stand cancelled. They will not be promoted to the next Semester. They may seek re-registration for all those Courses registered in that Semester in which he got detained, by seeking re-admission for that Semester as and when offered; in case if there are any Professional Electives and/or Open Electives, the same may also be re-registered if offered, however, if those Electives are not offered in later Semesters, then alternate Electives may be chosen from the same set of Elective Courses offered under that category.

8.0 Academic Requirements

The following Academic Requirements have to be satisfied, in addition to the Attendance Requirements mentioned in Item No.7.

- 8.1** A student shall be deemed to have satisfied the Academic Requirements and earned the Credits allotted to each Course, if he secures not less than 35% marks (25 out of 70 marks) in the Semester End Examination, and a minimum of 40% of marks in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together; in terms of Letter Grades, this implies securing P Grade or above in that Course. A student shall be deemed to have satisfied the Academic Requirements and earned the Credits allotted to main project, if he secures not less than 40% marks in internal evaluation as

well as external evaluation. This implies securing P Grade or above in the main project.

- 8.2** A student shall be deemed to have satisfied the Academic Requirements and earned the Credits allotted to - Mini-Project/ Seminar/ Comprehensive Viva, if he secures not less than 40% of the total marks to be awarded for each. The student would be treated as failed, if he -
- (i) does not submit a report on his Mini-Project, or does not make a presentation of the same before the Evaluation Committee as per schedule, or Does not appear for Comprehensive Viva
 - (ii) does not present the Seminar as required in the VII Semester, or
 - (iii) secures less than 40% of total marks in Mini-Project/ Seminar evaluations/Comprehensive Viva.

He may reappear once for each of the above evaluations, when they are scheduled again; if he fails in such 'one reappearance' evaluation also, he has to reappear for the same in the next subsequent Semester, as and when it is scheduled.

- 8.3** A Student will not be promoted from I Year to II Year, unless he fulfils the Attendance and Academic Requirements and secures a minimum of total 24 Credits of I Year, from all the relevant regular and supplementary examinations, whether he takes those examinations or not.

- 8.4** A Student will not be promoted from II Year to III Year, unless he fulfils the Attendance and Academic Requirements and secures a minimum of total 57 Credits up to IV Semester, from all the relevant regular and supplementary examinations, whether he takes those examinations or not.

- 8.5** A Student will not be promoted from III Year to IV Year, unless he fulfils the Attendance and Academic Requirements and secures a minimum of total 86 Credits up to VI Semester, from all the relevant regular and

supplementary examinations, whether he takes those examinations or not.

- 8.6** A Student shall - register for all Courses covering 192 Credits as specified and listed (with the relevant Course/ Course Classifications as mentioned) in the Course Structure, put up all the Attendance and Academic requirements for 192 Credits securing a minimum of P Grade (Pass Grade) or above in each Course, and 'earn All 192 Credits securing $SGPA \geq 5.0$ (in each Semester), and CGPA (at the end of each successive Semester) ≥ 5.0 , to successfully complete the UG Programme.
- 8.7** After securing the necessary 192 Credits as specified for the successful completion of the entire UG Programme, an exemption up to 8 secured Credits (in terms of two of their corresponding Courses) may be permitted for optional drop out from these 192 Credits earned; resulting in 184 Credits for UG Programme performance evaluation, i.e., the performance of the Student in these 184 Credits shall alone be taken into account for the calculation of 'the final CGPA (at the end of UG Programme, which takes the SGPA of the VIII Semester into account), and shall be indicated in the Grade Card of VIII Semester; however, the Student's Performances in the earlier individual Semesters, with the corresponding SGPA and CGPA for which already Grade Cards are given, will not be altered. Further, optional drop out for such 8 secured Credits shall not be allowed for Courses listed Table-1 below.

Table-1

S. No.	Course Particulars
1	All practical Courses
2	Industry Oriented mini project
3	Comprehensive Viva-Voce
4	Seminar
5	Project Work

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- 8.8** If a Student registers for additional courses (in the parent Department or other Departments/Branches of Engineering) other than those listed Courses totaling to 192 Credits as specified in the Course Structure of his Department. A student having the CGPA of ≥ 7.0 and having passed all previously registered courses are only allowed to register such additional course from the offered open electives. The performances in those additional Courses (although evaluated and graded using the same procedure as that of the required 192 Credits) will not be taken into account while calculating the SGPA and CGPA. For such 'additional courses' registered, % marks and Letter Grade alone will be indicated in the Grade Card, as a performance measure, Course to completion of the Attendance and Academic Requirements as stated in Items 7 and 8.1 – 8.7 above.
- 8.9** Students who fail to earn 192 Credits as per the Course Structure, and as indicated above, within 8 Academic Years from the Date of Commencement of their I Year shall forfeit their seats in B.Tech. Programme and their admissions shall stand cancelled.
- 8.10** When a Student is detained due to shortage of attendance in any Semester, he may re-register for that Semester, as and when offered, with the Academic Regulations of the Batch into which he re-registers. However, no Grade Allotments or SGPA/ CGPA calculations will be done for that entire Semester in which he got detained.
- 8.11** When a Student is detained due to lack of Credits in any year, he may be re-register for the next year, after fulfilment of the Academic Requirements, with the Academic Regulations of the Batch into which he re-registers.
- 8.12** A student eligible to appear in the Semester End Examination in any Course, but absent at it or failed (thereby failing to secure P Grade or above), may reappear for that Course at the supplementary examination as and when conducted. In such cases, his Internal Marks (CIE) secured earlier for that Course will be carried over, and added to the Marks to be obtained

in the SEE supplementary examination, for evaluating his performance in that Course.

9.0 Evaluation - Distribution and Weightage of Marks

9.1 The performance of a student in each Semester shall be evaluated Course-wise (irrespective of Credits assigned) with a maximum of 100 marks for Theory or Practicals or Seminar or Drawing/Design or Mini-Project or Minor Course, etc; however, the B.Tech. Project Work (Major Project) will be evaluated for 200 Marks. These evaluations shall be based on CIE (Continuous Internal Evaluation) and SEE (Semester End Examination), and a Letter Grade corresponding to the percentage marks obtained shall be given.

9.2 For Theory Courses 30 marks are allocated for Continuous Internal Evaluation. Continuous Internal Evaluation during a semester is based on two internal examinations conducted during the semester and attendance put in by the student in that semester. 70 marks are allocated for the Semester End Examination (SEE).

- (a) Internal evaluation for 30 marks in each course consists of two internal examinations (for 20 marks), two assignments (for 5 marks) and attendance in that course (for 5 marks).
- (b) Internal examination question paper consists of Part-A and Part-B. Part-A consists of 5 short answer questions of 1 mark each, Part-B consists of 5 descriptive questions out of which 3 are to be answered, each question carrying 5 marks. The duration of internal examination is 1 hour 30 minutes.
- (c) Out of the two Assignments, the first Assignment should be submitted before the conduct of the first internal examination and second Assignment should be submitted before the conduct of the second internal examination. Each Assignment consists of 5 questions, each question carries 1 mark.

- (d) The final marks (for total of 25) secured by the student in 'Internal Examination and the Assignment' for the semester are arrived at by giving a weightage of 70% to the best secured 'internal examination and Assignment' and 30% weightage to the least secured 'internal examination and Assignment'. A student who is absent from any assignment/ internal examination for any reason what so ever shall be deemed to have secured 'zero' marks in the test/ examination and no makeup test/ examination shall be conducted.
- (e) Five marks in each course are allocated for the attendance of the student during the semester in that course. The allocation of the marks for attendance is as follows.

% of Attendance	Marks allocated
Below 75%	Nil
75% to 85%	2
85% to 95%	4
>95%	5

- 9.3 For Practical Courses, there shall be a Continuous Internal Evaluation (CIE) during the Semester for 40 internal marks, and 60 marks are assigned for Lab./Practical Semester End Examination (SEE). Out of the 40 marks for internals, day-to-day work in the laboratory shall be evaluated for 30 marks; and for the remaining 10 marks - internal practical test shall be conducted by the concerned laboratory teacher. The end semester examination SEE for practicals shall be conducted with an external examiner and the laboratory teacher.
- 9.4 For the Courses of design and / or drawing, (such as Engineering Graphics, AutoCAD, Engineering Drawing, Machine Drawing, Estimation etc.,) the internal evaluation carries 40 marks (the distribution is 15 marks for day-to-day work, 20 marks for internal examination and 5 marks for end semester attendance). There shall be 60 marks for semester end

examination. Internal exam marks will be awarded from two internal examinations conducted in a semester, with a weightage of 70% of the best secured internal examination and 30% of the least secured internal examination.

Question paper pattern

Internal Exam- Maximum Marks: 20

Part- A of internal exam contains short answer questions for five marks.

Part-B contains three questions with internal choice, following judicious distribution of questions, unit wise. Each question carries five marks.

Semester End Examination (SEE) – Maximum Marks: 60

Part-A of SEE contains 10 short answer questions of 1 mark each.

Part-B contains five questions with internal choice, following judicious distribution among five units. Each question carries 10 marks.

- 9.5 **Open Electives:** Students are to choose One Open Elective (OE-I) during VII Semester, one (OE-II) and one (OE-III) in VIII Semester from the list of Courses offered under Open Electives.
- 9.6 There shall be a Mini-Project, to be taken up in the college or industry during the summer vacation after VI Semester End Examination. The mini project shall be evaluated during the VII Semester. The mini project shall be submitted in a report form along with the project model if any and should be presented before a committee, which shall evaluate for 100 marks. The committee consists of Head of the Department, the supervisor of mini project, a senior faculty member of the department and an external examiner. There shall be no internal

marks for Mini-project. The external examiner shall be appointed by the Controller of Examinations from a panel of three members submitted by the Head of the Department.

- 9.7 There shall be a Seminar presentation in VIII Semester. For the Seminar, the student shall collect the information on a specialized topic related to his branch other than the project topic and prepare a technical report and submit to the department. The presentation demonstrating understanding of the topic and technical report shall be evaluated by a Departmental committee consisting of the Head of the department, Seminar supervisor and a senior faculty member from the department. The seminar will be evaluated for 100 marks. There shall be no internal marks for the seminar.
- 9.8 There shall be a Comprehensive Viva-Voce in VIII Semester. The Comprehensive Viva-Voce will be conducted by a Committee consisting of the Head of the Department and three Senior Faculty members of the Department. The Comprehensive Viva-Voce is intended to assess the student's understanding in various Courses he studied during the B.Tech. course of study. The Comprehensive Viva-Voce is evaluated for 100 marks by the Committee. There shall be no internal marks for the Comprehensive Viva-Voce.
- 9.9 The **main project** shall be evaluated for 200 marks out of which 80 marks are for internal evaluation and 120 marks are for Semester End Evaluation. The project work shall be taken up in the beginning of VIII semester and shall be completed by the end of VIII semester. Internal evaluation shall be conducted by Head of the Department and the project supervisor for 80 marks. The Semester End Examination shall be based on the report submitted and a viva-voce exam for 120 marks by committee comprising of the Head of the Department, project supervisor and an external examiner. The

external examiner shall be appointed by the Controller of Examinations from a panel of three members submitted by the Head of the Department.

10. 0. Semester End Examination

10.1. Theory Courses

The Semester End Examination will be conducted for 70 marks which consist of Part-A and Part-B. The examination is of 3 hours duration. Question paper pattern is as follows.

Part-A: 20 Marks

There shall be 10 questions each carrying 2 Marks. (Two questions from each Unit)

Part-B: 50 Marks

There shall be 5 questions with internal choice, each question carrying 10 marks. One question from each unit of the syllabus should be framed.

10.2. Practical Courses

Each lab course is evaluated for 60 marks. The examination shall be conducted by the laboratory teacher and an external examiner. External examiner will be appointed by the Controller of Examinations from other institutions or industry.

10.3. Supplementary Examinations

The schedule for supplementary examinations shall be as notified by the institute from time to time.

10.4 For NCC/ NSS/ NSO types of Courses, and/or any other Mandatory Non-Credit Course offered in a Semester, a 'Satisfactory Participation Certificate' shall be issued to the Student from the concerned authorities, only after securing $\geq 65\%$ attendance in such a Course. No marks or Letter Grade shall be allotted for these activities and it will not be part of calculation of CGPA.

11.0. Grading Procedure

11.1. Marks will be awarded to indicate the performance of each student in each Theory Course, or Lab/Practicals, or Seminar, or Project, or Mini-Project, etc., based on the % marks obtained in CIE + SEE (Continuous Internal Evaluation + Semester End Examination). As a measure of the student's performance, a 10-point Absolute Grading System using the following Letter Grades (UGC Guidelines) and corresponding percentage of marks shall be followed.

<i>% of Marks Secured (Class Intervals)</i>	<i>Letter Grade (UGC Guidelines)</i>	<i>Grade Points</i>
100% or below but not less than 85% ($\geq 85\%$, $\leq 100\%$)	O (Excellent)	10
Below 85% but not less than 70% ($\geq 70\%$, $< 85\%$)	A (Very Good)	9
Below 70% but not less than 60% ($\geq 60\%$, $< 70\%$)	B (Good)	8
Below 60% but not less than 55% ($\geq 55\%$, $< 60\%$)	C (above Average)	7
Below 55% but not less than 50% ($\geq 50\%$, $< 55\%$)	D (Average)	6
Below 50% but not less than 40% ($\geq 40\%$, $< 50\%$)	P (Pass)	5
Below 40% ($< 40\%$)	F (FAIL)	0

11.2 A student obtaining F Grade in any Course shall be considered 'failed' and will be required to reappear as 'Supplementary Candidate' in the End Semester Examination (SEE), as and when offered. In such cases, his Internal Marks (CIE Marks) in those Course(s) will remain same as those he obtained earlier.

11.3. A Letter Grade does not imply any specific % of Marks.

11.4. In general, a student shall not be permitted to repeat any Course/ Course(s) only for the sake of 'Grade Improvement' or 'SGPA/ CGPA Improvement'. However, he has to repeat