

**ACADEMIC REGULATIONS
COURSE STRUCTURE AND SYLLABI**

M.TECH.

2017 – 2018

(Choice Based Credit System)



**COLLEGE OF ENGINEERING
(AUTONOMOUS)**

**GAYATRI VIDYA PARISHAD
COLLEGE OF ENGINEERING
(AUTONOMOUS)**

Re-Accredited by NAAC with A Grade with a CGPA of 3.47/4.00

Affiliated to JNTUK-Kakinada

MADHURAWADA, VISAKHAPATNAM – 530 048

VISION

To evolve into and sustain as a Centre of Excellence in Technological Education and Research with a holistic approach.

MISSION

To produce high quality engineering graduates with the requisite theoretical and practical knowledge and social awareness to be able to contribute effectively to the progress of the society through their chosen field of endeavor.

To undertake Research & Development, and extension activities in the fields of Science and Engineering in areas of relevance for immediate application as well as for strengthening or establishing fundamental knowledge.

FOREWORD

The GVP college of Engineering (Autonomous) has entered into a new phase as it completed one cycle of autonomy. Recently the Autonomy has been extended for six more years(2014-2020) by UGC, the affiliating University JNTU-K. The experiences with the experiments and innovations brought into the curriculum with the help of autonomy are proving successful and encouraging.

The paradigm shift in the curriculum design has been brought into the system in 2013 in the form of Out Come Based Education (OBE) and the systems and processes are stabilized in this regard.

Recently, the Choice Based Credit System (CBCS) has been introduced along with the grading system as per the guidelines of UGC, to offer more choice, facilitate the cross mobility and uniformity across the country.

The concepts of Pedagogical training and Industrial training are also introduced after II semester as an elective to enable the graduates sharpen their skills.

Credits are introduced for Dissertation work to infuse more seriousness and as a qualitative measure of the work carried out.

I thank all the expert members, Industry representatives, University representatives and all other members on Boards of Studies, Academic Council who helped us in brining a good shape to the curriculum.

I also thank the members of the Governing Body for their constant support and guidance in all our academic endeavors.

I hope with these changes, the curriculum will be more beneficial to the students to make them ready to face the elite society and the challenges ahead.

PRINCIPAL

ACADEMIC REGULATIONS

(UNDER CHOICE BASED CREDIT SYSTEM EFFECTIVE FROM 2015-16 ADMITTED BATCH)

The M.Tech. Degree of Jawaharlal Nehru Technological University Kakinada shall be recommended to be conferred on candidates who are admitted to the program and fulfill all the following requirements for the award of the Degree:

1.0 ELIGIBILITY FOR ADMISSION:

Admission to the above program shall be made subject to the eligibility, qualifications and specialization as per the guidelines prescribed by the APSCHE and AICTE from time to time.

2.0 AWARD OF M.TECH. DEGREE:

- a. A student shall be declared eligible for the award of the M.Tech. degree, if he pursues a course of study and completes it successfully for not less than two academic years and not more than four academic years from the year of first admission.
- b. A student, who fails to fulfill all the academic requirements for the award of the Degree within four academic years from the year of his admission, shall forfeit his seat in M.Tech. programme.

3.0 STRUCTURE OF THE PROGRAMME:

Semester	No. of courses		Credits
I	4 THEORY + PE-I+ PE-II + 1 LAB	6*3 + 1*2	20
II	4 THEORY + PE-III+ PE-IV + 1 LAB + ATCSL	6*3 + 2*2	22
	PEDAGOGY TRAINING / INDUSTRIAL TRAINING		2
III	DISSERTATION		36
IV	DISSERTATION (contd.)		
	TOTAL		80

PE: Professional Elective; **ATCSL:** Advanced Technical Communication Skills Lab (in I/II semester)

Each course is normally assigned a certain number of credits as follows:

3 credits for 3 lecture periods per week.

2 credits for 3 laboratory periods per week.

4.0 REGISTRATION: A student shall register for courses in each semester at the beginning, from I semester onwards according to the choice provided and courses offered by the concerned department.

5.0 ATTENDANCE REQUIRMENTS

- a. The attendance shall be considered course wise.
- b. A candidate shall be deemed to have eligibility to write his end semester examinations in a course if he has put in at least 75% of attendance in that course.
- c. Shortage of attendance up to 10% in any course (i.e. 65% and above and below 75%) may be condoned by a Committee on genuine and valid reasons on representation by the candidate with supporting evidence.
- d. Shortage of attendance below 65% shall in no case be condoned.
- e. A student who gets less than 65% attendance in a maximum of two courses in any semester shall not be permitted to take the end-semester examination in which he/she falls short. His/her registration for those courses will be treated as cancelled. The student shall re-register and repeat those courses as and when they are offered next.
- f. If a student gets less than 65% attendance in more than two courses in any semester he/she shall be detained and has to repeat the entire semester.
- g. The attendance requirements are also applicable to Industrial training and Pedagogy training.

6.0 METHOD OF EVALUATION:

The performance of a student in each semester shall be evaluated course-wise with a maximum of 100 marks each for theory, practical course.

6.1 Theory: The assessment shall be for 40 marks through Continuous Internal evaluation and 60 marks through end-semester examination of three hours duration.

6.2 Continuous Internal evaluation: One part of the internal evaluation shall be made based on the average of the marks secured in the two internal examinations of 30 marks each conducted one in the middle of the Semester and the other at the end of the semester. Each mid-term examination shall be conducted for duration of 90 minutes with 3 questions without any choice. The remaining 10 marks are awarded through an average of continuous evaluation of assignments / seminars / any other method, as notified by the teacher at the beginning of the semester.

6.3 End-semester examination: For 80% of the theory courses, the question paper shall be set externally and valued both internally and externally. A chief examiner appointed for each course shall monitor the valuation process. If the difference between the first and second valuations is less than or equal to 9 marks, the better of the two valuations shall be awarded. If the difference between the first and second valuation is more than 9 marks, the chief examiner shall value the script. The marks given by the chief examiner shall be final. For the remaining 20% of the theory courses (as notified by the Principal), the end semester evaluation shall be totally internal.

6.4 Laboratory: All Laboratory courses, in I and II Semesters, shall be evaluated for 100 marks, out of which for 50 marks, through external examination at the end of the semester and for 50 marks through internal evaluation. The 50 internal marks are distributed as 25 marks for day-to-day work in two cycles and 25 marks for internal examination. The internal examination shall be conducted by the teacher concerned and another faculty member of the same department once for each cycle of instruction period and average of the two shall be considered for award of marks. 10 out of 12 to 16 experiments/exercises shall be completed in a semester.

6.5 Pedagogy training shall be for a period of atleast 4 weeks and evaluation shall be totally internal for 100 marks based on the performance during the training.

6.6 Industrial training shall be for a period of atleast 4 weeks and a report has to be submitted by the end of III semester. The assessment shall be carried out for 100 marks during IV semester by an internal evaluation committee comprising Head of the Department and two faculty of the department including the project Supervisor.

6.7 Supplementary examinations: Supplementary examinations for the odd semester shall be conducted with the regular examinations of even semester and vice versa.

A student who failed in the end examination shall be given one chance to re-register for each course provided the internal marks secured by him in that course is less than 50%. In such a case, the student must re-register for the course(s). In the event of re-registration, the internal marks and end examination grades obtained in the previous attempt are nullified.

7.0 EVALUATION OF DISSERTATION WORK:

Every candidate shall be required to submit the dissertation after taking up a topic approved by the Departmental Research Committee (DRC).

- a. A Departmental Research Committee (DRC) shall be constituted with the Head of the Department as the Chairman and two senior faculty as Members along with the supervisor to oversee the proceedings of the dissertation work from allotment of topic to submission.
- b. A Central Research Committee (CRC) shall be constituted with a Professor as Chair Person, Heads of the Departments that are offering the M.Tech. programs and two other senior faculty members.
- c. Registration of Dissertation Work: A candidate shall register for the Dissertation work in the beginning of the second year, only after satisfying the attendance requirement of all the courses upto II semester. The duration of the Dissertation work is for two semesters.

- d. After satisfying 7.0 c, a candidate has to submit, in consultation with his supervisor, the title, objective and plan of action of his project work to the DRC for its approval. Only after obtaining the approval of DRC the student can initiate the Dissertation work.
- e. If a candidate wishes to change his supervisor or topic of the Dissertation work he can do so with the approval of the DRC. If so, his date of registration for the Dissertation work shall start from the date of change of Supervisor or topic as the case may be whichever is earlier.
- f. Evaluation of the dissertation shall be done twice, one at the end of the III Semester and the other during the IV Semester.
- g. The evaluation at the end of III semester shall be carried out by DRC1 for 10 marks based on the presentation made by student on the topic selected, literature survey and the progress of the work. The student shall be permitted to proceed for the remaining work in IV semester if he / she gets atleast 5 marks. Otherwise, the student shall reappear for DRC1 with improvised work.
- h. The evaluation during IV semester shall be carried out through DRC2, DRC3, and CRC respectively each for 10 marks.
- i. A candidate shall be permitted to submit his dissertation only after successful completion of all theory and practical course with the approval of CRC but not earlier than 40 weeks from the date of registration of the project work. The candidate shall make an oral presentation before the CRC and after the approval by CRC, plagiarism check shall be conducted for the Dissertation and shall submit a draft copy to the Principal through the concerned Head of the Department.
- j. Three copies of the dissertation certified by the Supervisor shall be submitted to the College after approval by the CRC.
- k. For the purpose of adjudication of the dissertation, an external examiner shall be selected by the Principal from a panel of 5 examiners who are experienced in that field proposed by the Head of the Department in consultation with the supervisor.

- l. The final evaluation, i.e., viva-voce examination, for 60 marks, shall be conducted by a board consisting of the supervisor, Head of the Department and the external examiner.
- m. A student is deemed to be failed, if he secures less than 30 marks in the external viva-voce examination or less than 50 marks from both internal and external viva-voce examination put together and shall be awarded Fail grade (F). In such a case, the candidate shall revise and resubmit the dissertation, in a time frame prescribed by the CRC. If the student fails once again, the dissertation shall be summarily rejected and the candidate shall change the topic and go through the entire process afresh.

8. ACADEMIC REQUIREMENTS:

- a. In case of *theory courses* having both internal and end semester examination, a student is deemed to be failed if he secures less than 24 marks in the end semester examination or less than 50 marks from both internal and end semester examination put together. For all courses having examination at the end, a student is deemed to be failed if he secures less than 50 marks.
- b. In case of *Practical courses* having both internal and end semester examination/evaluation, a student is deemed to be failed if he secures less than 25 marks in the end semester examination or less than 50 marks from both internal and end semester examination put together. A student is deemed to be failed in *dissertation*, if he secures less than 30 marks in the external viva-voce examination or less than 50 marks from both internal and external viva-voce examination put together. In case of *Pedagogy Training / Industrial Training / Advanced Technical Communication Skills Lab* having examination / evaluation at the end, a student is deemed to be failed if he secures less than 50 marks.

9.0 Grading System: Absolute grading system shall be followed for the award of grades.

9.0.1 Grade Point: It is a numerical weight allotted to each letter grade on a 10-point scale.

9.0.2 Letter Grade: It is an index of the performance of students in a said course. Grades are denoted by letters O, A+, A, B+, B, C, P and F.

Based on the marks secured, a Grade Point is awarded for each theory course / lab course / dissertation work / Pedagogy Training / Industrial Training along with a corresponding Letter Grade as per the following:

Grades and Grade Points

Letter Grade	Grade Point	Marks range	
		Theory	Practical/Training/ Dissertation
O (Outstanding)	10	90-100	90-100
A+ (Excellent)	9	80-89	80-89
A (very good)	8	70-79	70-79
B+ (Good)	7	60-69	60-69
B (Above average)	6	*50-59	*50-59
F (Fail)	0	-	-
Ab (Absent)	0	-	-

* Pass mark

9.0.3. Credit Point: It is the product of grade point and number of credits for a course.

9.0.4. The award of class and division after acquiring eligibility for the award of M.Tech., degree is as per the following:

First class with distinction	$CGPA \geq 7.75$
First class	$6.75 \leq CGPA < 7.75$
Second class	$6.00 \leq CGPA < 6.75$

9.0.5. CGPA to Percentage of Marks Conversion:

At the end of the Programme,

Equivalent percentage of marks = $(CGPA - 0.75) * 10$

9.1 Computation of Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

The SGPA is the ratio of sum of the product of the number of credits with the grade points scored by a student in all the courses taken by a student and the sum of the number of credits of all the courses undergone by a student in a semester, i.e

$$\text{SGPA (S}_i\text{)} = \Sigma(\text{C}_i \times \text{G}_i) / \Sigma \text{C}_i$$

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

The CGPA is also calculated in the same manner taking into account all the courses undergone by a student over all the semesters of a programme, i.e.

$$\text{CGPA} = \Sigma(\text{C}_i \times \text{S}_i) / \Sigma \text{C}_i$$

where S_i is the SGPA of the i^{th} semester and C_i is the total number of credits in that semester. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the transcripts.

Transcript for each semester shall be issued containing letter grades and grade points along with attendance grade, for each of the courses registered, SGPA of that semester and CGPA up to that semester. Marks will not be displayed on the transcript.

A consolidated transcript indicating the performance in all semesters shall also be issued.

Note: The CGPA ranges for the award of class or division shall be as decided by the affiliating University.

9.2 AWARD OF THE M.TECH. DEGREE: A student shall secure a **pass** in all courses corresponding to 80 credits to be eligible for the award of the M.Tech. degree.

9.3 PROVISION FOR IMPROVEMENT OF CGPA: A student shall be permitted to improve his class or division from **PASS CLASS** to

SECOND CLASS or SECOND CLASS to FIRST CLASS after successful completion (passing all the courses) of the programme. He / She may be allowed to appear for supplementary examinations and earn grade points for improvement from at the most two courses of his / her choice. The improvement provision shall be limited to one attempt.

10. WITHHOLDING OF RESULTS:

If the candidate has not paid any dues to the college or if any case of indiscipline is pending against him, the result of the candidate shall be withheld and he will not be allowed into the next higher semester. The recommendation for the issue of the degree shall be liable to be withheld in all such cases.

11. TRANSITORY REGULATIONS:

- a. A candidate who has discontinued or has been detained for want of attendance or who has failed after having studied the course, is eligible for admission to the same or equivalent course(s) as and when course(s) is/are offered, subject to 5.0 and 2.0.
- b. Credit equivalences shall be drawn for the students re-admitted into 2015 regulations from the earlier regulations. A Student has to register for the substitute / compulsory / pre-requisite courses identified by the respective Boards of Studies.
- c. The student has to register for substitute courses, attend the classes and qualify in examination and earn the credits.
- d. The student has to register for compulsory courses, attend the classes and qualify in examination.
- e. The student has to register for the pre-requisite courses, attend the classes for which the evaluation is totally internal.

12.0 General:

- i. Where the words 'he', 'him', 'his', occur, they imply 'she', 'her', 'hers', also.
- ii. The academic regulation should be read as a whole for the purpose of any interpretation.

iii. In the case of any doubt or ambiguity in the interpretation of the above rules, the decision of the Chairman, Academic Council is final. The college may change or amend the academic regulations or syllabi from time to time and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the college.