

**ANNAMACHARYA INSTITUTE OF TECHNOLOGY & SCIENCES :: TIRUPATI  
(AUTONOMOUS)**

***Academic Regulations (AK19) for  
M. Tech (Regular-Full time)***

***(Effective for the students admitted into I year from the Academic Year 2019-2020 onwards)***

**1.0 Minimum Qualifications For Admission**

Admission to M.Tech courses is open to all candidates who have passed B.E/B.Tech course (in relevant specialization) or any other examinations recognized by Jawaharlal Nehru Technological University Anantapur, Ananthapuramu/ Govt. of A.P as equivalent thereto.

Admission into M.Tech courses will be as per the guidelines of AICTE, Government of A.P and Jawaharlal Nehru Technological University Anantapur, Ananthapuramu in force at the time of admission.

**2.0 Programmes of Study**

The programmes of study prescribed for M.Tech Degree are

1. M.Tech (Computer Science and Engineering)
2. M.Tech (Digital Electronics and communication Systems)
3. M.Tech (Power Systems)
4. M.Tech ( Structural Engineering)
5. M.Tech (Production Engineering and Engineering Design)
6. Any other course offered by the college in future

2.1 The duration of M.Tech program is of two academic years divided into four semesters comprising two semesters in each academic year. A student is required to choose the specialization at the time of admission. No change of the specialization shall be allowed after the admissions are closed.

2.2 A student is required to complete the course of study satisfying the attendance requirements in all the four semesters of the course within a period of four academic years from the year of admission, failing which he/she shall be declared ineligible to pursue M.Tech degree

*Completing the course of study shall mean not only satisfying the attendance requirements but also passing of all the courses within the stipulated period.*

**3.0 Structure of the Programme**

3.1 Every programme will have a curriculum with a syllabi consisting of theory, practical, dissertation work, etc., as given below:

- i. Professional core
- ii. Professional Elective
- iii. Open Elective
- iv. Mandatory Courses
- v. Dissertation work

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

- (i.) One credit per lecture period per week
- (ii.) 2 credits for 4 periods of laboratory practice per week
- (iii.)Dissertation 1 carries 10 credits and Dissertation 2 carries 16 credits

**3.2 Course Work**

The programmes are offered on a semester basis consisting of four semesters.

- (i) The first semester contains 6 theory courses of which one is audit course and two laboratory courses. Second semester consists of 5 theory courses of which one is mandatory(audit) course and 2 laboratory courses and 1 mini project.
- (ii) Third semester contains 1 open elective and 1 professional elective and dissertation 1/ Industry oriented Project. Fourth semester contains only Dissertation 2.
- (iii) Only on completion of all the prescribed courses and dissertation 1 upto third semester, the candidates will be permitted to submit the final thesis/dissertation 2 towards the end of the final semester. Four copies of the dissertation certified in the prescribed form by the supervisor and concerned HOD shall be submitted to the examination section for further processing.
- (iv) Mini Project with seminar: Student in II semester should take guidance from the supervisor in the department,

go through journal publications study different cases and applications and evolve with a report on the task he/she has taken up and present a seminar. This is enforced to develop the project skills in the student.

- (v) The dissertation 1 **(TO BE REVIEWED IN NEXT CAC AND WILL BE FINALIZED)** work will be adjudicated by the department level committee (approved by the principal) comprising HoD, one senior faculty and project coordinator. Student will be allowed to visit the external R&Ds/industry/govt. depts./ongoing project sites and identify a problem for this project. He/She has to complete the project under supervision of the supervisor from the parent department and also under the guidance of co-supervisor from an external agency in which he/she has taken up the project. The cutoff date for submission of dissertation 1 will normally be the last instruction date of the III semester.
- (vi) The dissertation 2 **(TO BE REVIEWED IN NEXT CAC AND WILL BE FINALIZED)** work will be adjudicated by one external examiner appointed by the chairman of board of studies with the approval of the Principal. Principal will appoint the examiner from the panel of three experts submitted by the HoD. Student will be allowed to visit the external R&Ds/industry/govt. depts./ongoing project sites and identify a problem for this project. He has to complete the project under supervision of the supervisor from the parent department and also under the guidance of co-supervisor from an external agency in which he has taken up the project. The cutoff date for submission of dissertation 2 will normally be the last instruction date of the IV semester.
- (vii) The candidate should be allowed to submit the dissertation 1 at the end of III sem and dissertation 2 at the end of IV sem only after obtaining plagiarism report with less than 30% fulfilling the other conditions mentioned in 7.0.(viii).
- (viii) The medium of instruction for all Course work, Examination, Seminar Presentation, Project reports and all academic activities shall be English.

#### **4.0 Attendance Requirement**

Regular course of study means a minimum aggregate attendance of 75% in all the courses including Audit course in the semester put together. The aggregate attendance in any semester is calculated as  $\frac{\text{total number of classes attended by the student in all the courses of that semester put together}}{\text{total number of classes held in all the courses of that semester put together}} \times 100$ .

Condonation of shortage of attendance in genuine cases on health grounds may be recommended by the Principal, if a student puts in an aggregate attendance of at least 65%. However the student has to make an application and pay the prescribed fee.

A student who has not satisfied these requirements of attendance in any semester shall have to repeat that semester. The attendance under this clause does not include attendance at any examination/test/extra-curricular activities/co-curricular activities.

Students who represent the college in inter collegiate tournaments organized by JNTUA and those who represent University or State or nation shall be given attendance exemption of maximum one week subject to the prior approval by the principal and on production of certificate from the concerned competent authorities. However, prior permission from the principal is mandatory for participation.

##### **4.1 Eligibility for appearing for the end examinations**

All the students who satisfy the attendance requirements in that semester shall register for the end examinations of that semester by paying the prescribed examination fee. However, they have to clear all the dues to the college before they collect their hall tickets. It is mandatory for all the eligible students to apply for the regular end examinations failing which they have to pay all the preceding examinations fee with fine as prescribed by the college, if they wish to appear for next examination

#### **5.0 Evaluation**

##### **5.1 End Examination**

Semester End examination of theory subjects shall have the following pattern:

- i. There shall be 5 questions and all questions are compulsory.
- ii. In each of the questions, there shall be either/or type questions of 12 marks each. Student shall answer any one of them.
- iii. Each of these questions shall cover one unit of the syllabus.
- iv. The end semester examination for laboratory Courses shall be conducted for 60 marks by the laboratory teacher concerned and one senior teacher of the same department nominated by the Principal.

##### **5.2 Internal Assessment**

Two Internal Examinations shall be held during the semester for 40 marks. First internal examination shall be

conducted on half of the syllabus and second internal examination shall be conducted on remaining half of the syllabus. In each internal exam, a student shall answer Three questions of five in 2 hours. All the Questions shall be of equal weightage of 10 marks. Marks obtained for 30 will be converted to 40 by multiplying with 4/3.

Final Internal marks for a total of 40 marks shall be arrived at by considering the marks secured by the student in both the internal examinations with 80% weightage to the better internal exam and 20% to the other.

For practical subjects there shall be a continuous evaluation during the semester for 40 sessional marks. Day-to-day work in the laboratory shall be evaluated for 30 marks by the concerned laboratory teacher based on the regularity/record/ viva. One Internal examination at the end of the semester will be conducted by the concerned laboratory teacher for 10 Marks. Internal marks will be arrived by summing up the marks through Day-to-day work and through internal Examination. The end examination shall be conducted by the concerned laboratory teacher and senior expert in the same subject of the department.

**5.3 Requirement for clearing any course**

- (i) The students have to obtain a minimum of 50 % marks in the CIE and end examination taken together, otherwise they will be awarded grade-F in that course. F is considered as a fail grade indicating that the student has to reappear for the end examination in that course and obtain a non fail-grade for clearing that course.
- (ii) In other words to pass in a course, a student shall score 24 marks (40% in SEE or more) out of 60 marks in the end examination and also shall score 50 marks or more out of 100 in the end examination and the continuous internal assessment put together.
- (iii) Apart from the regular end examinations, the college may also schedule and conduct supplementary examinations for all courses for the benefit of students with backlogs. Such of the students writing supplementary examinations as supplementary candidates, may have to write more than one examination per day.
- (iv) There is no provision for improvement of grade in any course of any semester. A student who has already appeared for a course in a semester and passed the examination is not entitled to reappear in the same course for improvement of letter grades.

**6.0 Distribution of weightages for End Examination and Internal Continuous Assessment**

S. No.	Nature of course	Marks	Type of examination and mode of assessment	Scheme of examination
1	Theory	60	End examination	This end examination in theory courses will be for a maximum of 60 marks.
		40	Continuous Internal Assessment	There shall be two sessional exams for 40 marks each. The marks shall be finalized with a weightage of 0.8 for the better score and 0.2 for the other score.
2	Practical	60	End Examination	This end examination in practical courses will be for a maximum of 60 marks.
		40	Continuous Internal Assessment	Day to Day Performance in lab experiments / viva voce, internal practical examination and Record.
		60	External examination	Quality of report, Presentation of the report, Viva Voce Examination.

3	Dissertation 1 <b>(TO BE REVIEWED IN NEXT CAC AND WILL BE FINALIZED)</b>	40	Continuous Internal Assessment	Dissertation Evaluation Committee comprising HOD, Senior faculty of the department and Guide / Supervisor shall assess the performance of the candidate based on two reviews, conducted at equal intervals of time during the 3 <sup>rd</sup> semester.
4	Dissertation 2 <b>(TO BE REVIEWED IN NEXT CAC AND WILL BE FINALIZED)</b>	140	External examination	Quality of report, Presentation of the report, Viva Voce Examination.
		60	Continuous Internal Assessment	Dissertation Evaluation Committee comprising HOD, Senior faculty of the department and Guide / Supervisor shall assess the performance of the candidate based on two reviews, conducted at equal intervals of time during the 4 <sup>th</sup> semester.
5	Audit Course	40	Continuous Internal Assessment	Audit Course shall not carry any credit but will be reflected in Grade sheet as "Audit" course and shall not be considered in the CGPA calculation. For calculating aggregate attendance, the attendance in the audit courses shall also be included. Minimum of 20 marks shall be obtained to declare pass in this course.

**7.0 Guidelines for Project Work** **(TO BE REVIEWED IN NEXT CAC AND WILL BE FINALIZED)**

- (i) After successful completion of the second semester, the candidate shall continue the dissertation work during the third and fourth semesters under the supervision of faculty member of the department within the college or the candidate may carry out the dissertation work in any reputed R&D organization, industry etc.
- (ii) Even when the candidate opts to carry out the dissertation outside the college, he will be allotted a faculty member as a guide to coordinate the reviews. The person from the outside organization supervising the dissertation work may be called co-guide.
- (iii) The candidate preferring to carry out the dissertation at an outside organization should produce a permission letter and No Objection Certificate (NOC) from the organization along with willingness of co-guide from the organization (whose research interests are same as the thesis work) at least three weeks before the commencement of third semester and should take the approval of the HOD/Principal for the same, failing which the candidate will be deemed to be carrying out the dissertation work in the college.
- (iv) The candidate carrying out the dissertation work either in the college or at an outside organisation, is required to attend review meetings conducted by the department. The candidate is allowed to submit the dissertation work only after the review meetings.
- (v) Within 10 days of the commencement of the third semester, the candidate is required to give an undertaking in the prescribed proforma to the effect that he will not take up any job during the dissertation period. If a candidate is found to be doing a job during the third-fourth semester, his/her admission will be cancelled.
- (vi) The candidates who are eligible for drawing stipend have to assist the department in conducting the practical classes, tutorials etc. for undergraduate students. They are eligible for only 20 days of casual leave in an academic year. Any excess leave or absence without any permission will automatically attract deduction of proportionate amount from their stipend.
- (vii) One Journal paper publication (or) one conference paper presentation is desirable to submit the dissertation work.
- (viii) Student shall also submit a certificate that his/her dissertation work being submitted is free from plagiarism. Students shall not resort to plagiarism of any nature/extent. Use of material, ideas, figures, code or data without appropriate acknowledgement or permission of the original source shall be treated as cases of plagiarism. Submission of material, verbatim or paraphrased, that is authored by another person or published

earlier by oneself shall also be considered as cases of plagiarism

- (ix) The candidate has to clear all the dues before submitting the dissertation work.
- (x) After completing the dissertation work the candidate should take the confirmation of project completion from the guide allotted by the department, HOD and Co-guide from the organization where applicable
- (xi) Only on completion of all the prescribed course work, the candidates will be permitted to submit the thesis/dissertation. Four copies of the thesis / dissertation certified in the prescribed form by the supervisor shall be submitted in the examination section of the college. The candidate should also submit the soft copy of the dissertation work.
- (xii) A viva-voce examination shall be conducted by a board consisting of the HOD, the supervisor and one external examiner.
- (xiii)

## 8.0 Supplementary Examinations

- 8.1.1 At the end of each Semester there will be regular examinations of the current Semester. Those students who are unable to pass their courses in their previous attempt can appear for the examinations under supplementary category along with the regular students.

## 9.0 Re-Registration for improvement of internal evaluation marks

Following are the conditions to avail the benefit of improvement of internal evaluation marks.

- 9.1 The candidate should have completed the course work and obtained examinations results for I, II, III and IV semesters.
- 9.2 He should have passed all the subjects for which the Internal Evaluation marks secured are more than 50%.
- 9.3 Out of the subjects the candidate has failed in the examination due to Internal Evaluation marks secured being less than 50%, the candidate shall be given one chance for each Theory subject and for a maximum of three Theory subjects for Improvement of Internal evaluation marks.
- 9.4 The candidate has to re-register for the chosen subjects and fulfill the academic requirements.
- 9.5 For each subject, the candidate has to pay a fee equivalent to one third of the semester tuition fee and the amount is to be remitted in the form of D.D.
- 9.6 In the event of availing the Improvement of Internal evaluation marks, the internal evaluation marks as well as the End Examinations marks secured in the previous attempt(s) for the reregistered subjects stand cancelled.

## 10.0 With-Holding of Results

If the candidate has any dues not paid to the institute or if any case of indiscipline or malpractice is pending against him/her, the result of such candidate shall be withheld and he/she will not be allowed / promoted into the next semester. The issue of awarding degree is liable to be withheld in such cases.

## 11.0 Grading Procedure

- 11.1 Grades will be awarded to indicate the performance of students in each theory subject, laboratory / practicals, seminar and project. Based on the percentage of marks obtained (Continuous Internal Evaluation plus Semester End Examination, both taken together), a corresponding letter grade shall be given.
- 11.2 The UGC recommends a 10-point grading system with the following letter grades as given below:

% of Marks Secured in a Subject/Course (Class Intervals)	Grade	Grade Points
Greater than or equal to 90%	O (Outstanding)	10
80 and less than 90%	A+ (Excellent)	9
70 and less than 80%	A (Very Good)	8
60 and less than 70%	B+ (Good)	7
50 and less than 60%	B (Satisfactory)	6
Below 50%	F (Fail)	0
Absent	Ab (Absent)	0

- 11.3 A student who has obtained an 'F' grade in any subject shall be deemed to have 'failed' and is required to reappear as a 'supplementary student' in the semester end examination, as and when offered. In such cases, internal marks in those subjects will remain the same as those obtained earlier.
- 11.4 To a student who has not appeared for an examination in any subject, 'Ab' grade will be allocated in that subject, and he

is deemed to have 'failed'. A student will be required to reappear as a 'supplementary student' in the semester end examination, as and when offered next. In this case also, the internal marks in those subjects will remain the same as those obtained earlier.

### 11.5 Computation of SGPA and CGPA

The UGC recommends the following procedure to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA):

- i. 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, i.e

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

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

- ii. 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.

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

where  $S_i$  is the SGPA of the  $i^{\text{th}}$  semester and  $C_i$  is the total number of credits in that semester.

- iii. The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the Memorandum of Marks / transcripts.

## 12.0 Illustration of Computation of SGPA and CGPA

### 12.1 Illustration for SGPA

Course	Credit	Letter Grade	Grade Point	Credit Point (Credit x Grade Point)
Course – I	3	O	10	3 x 10 = 30
Course – II	3	A+	9	3 x 9 = 27
Course – III	3	A	8	3 x 8 = 24
Course – IV	3	B+	7	3 x 7 = 21
Course – V	2	B	6	2 x 6 = 12
Course – VI	2	F	0	2 x 0 = 0
	16			114

Thus, SGPA = 114 / 16 = 7.125

### 12.2 Illustration for CGPA

Semester 1	Semester 2	Semester 3	Semester 4
Credit : 18	Credit : 18	Credit : 16	Credit : 16
SGPA : 7.125	SGPA : 6.9	SGPA : 7.3	SGPA : 6.8

Thus, CGPA = (18x7.125)+(18x6.9)+(16x7.3)+(16x6.8)/68=7.296

## 13.0 Passing Standards

A student shall be declared 'successful' or 'passed' in a semester, if he/she secures a GP  $\geq 6$  ('B' grade or above) in every subject/course in that semester (i.e. when the student gets an SGPA  $\geq 6.00$  at the end of that particular semester); and he shall be declared 'successful' or 'passed' in the entire post graduate programme, only when gets a CGPA  $\geq 6.00$  for the award of the degree as required.

- 13.1 After the completion of each semester, a grade card or grade sheet shall be issued to all the registered students of that semester, indicating the letter grades and credits earned. It will show the details of the courses registered (course code, title, no. of credits, grade earned, etc.), credits earned.

## 14.0 Award of degree

A student who registers for all the specified subjects/ courses as listed in the course structure and secures the required number of 68 credits (with CGPA  $\geq 6.0$ ), within 4 academic years from the date of commencement of the first academic year, shall be declared to have 'qualified' for the award of M.Tech degree in the chosen branch of Engineering selected at the time of admission.

Division / Class Awarded	CGPA Secured
First Class with Distinction	$\geq 7.5$
First Class	$\geq 6.5 < 7.5$
Second Class	$\geq 6.0 < 6.5$

**RULES FOR****DISCIPLINARY ACTION FOR MALPRACTICES / IMPROPER CONDUCT IN EXAMINATIONS**

	<b>Nature of Malpractices/Improper conduct</b>	<b>Punishment</b>
	<i>If the candidate:</i>	
1. (a)	Possesses or keeps accessible in examination hall, any paper, note book, programmable calculators, Cell phones, pager, palm computers, blue tooth or any other form of material concerned with or related to the course of the examination (theory or practical) in which he/she is appearing but has not made use of (material shall include any marks on the body of the candidate which can be used as an aid in the course of the examination).	Expulsion from the examination hall and cancellation of the performance in that course only.
(b)	Gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through cell phones with any candidate or persons in or outside the exam hall in respect of any matter.	Expulsion from the examination hall and cancellation of the performance in that course only of all the candidates involved. In case of an outsider, he/she will be handed over to the police and a case is registered against him / her.
2.	Has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the course of the examination (theory or practical) in which the candidate is appearing.	Expulsion from the examination hall and cancellation of the performance in that course and all other courses the candidate has already appeared including practical examinations and project work and shall not be permitted to appear for the remaining examinations of the courses of that Semester/year. The Hall Ticket of the candidate is to be cancelled.
3.	Impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred for four consecutive semesters from class work and all semester end examinations if his/her involvement is established. Otherwise, the candidate is debarred for two consecutive semesters from class work and all end examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. The performance of the original candidate, who has been impersonated, shall be cancelled in all the courses of the examination (including practicals and project work) already appeared and shall not be allowed to appear for examinations of the remaining courses of that semester/year.  If the imposter is an outsider, he/she will be handed over to the police and a case is registered against him/her. The continuation of the course by the candidate is subject to the academic regulations

		in connection with forfeiture of seat
4.	Smuggles in the Answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination.	Expulsion from the examination hall and cancellation of performance in that course and all the other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all semester end examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
5.	Uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that course.
6.	Refuses to obey the orders of the Chief Superintendent / Asst. Superintendent / any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walkout or instigates others to walkout, or threatens the officer-in-charge or any person on duty in or outside the examination hall of any injury to his/her person or to any of his/her relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer-in-charge, or any person on duty in or outside the examination hall or any of his/her relations, or indulges in any other act of misconduct or mischief which result in damage to or destruction of property in the examination hall or any part of the College campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	<p>In case of students of the college, they shall be expelled from examination halls and cancellation of their performance in that course and all other courses the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the courses of that semester. If candidate physically assaults the invigilator or/officer in charge of the examination, then the candidate(s) is (are) also barred and forfeit his/her (their) seat(s). In case of outsiders, they will be handed over to the police and a police case is registered against them.</p> <p style="text-align: center;">In case of outsiders, they will be handed over to the police and a police case is registered against them.</p>
7.	Leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.	Expulsion from the examination hall and cancellation of performance in that course and all the other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all semester end examinations. The continuation of the course by the candidate is subject to the academic



		regulations in connection with forfeiture of seat.
8.	Possess any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that course and all other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses of that semester/year. The candidate is also debarred and forfeits the seat.
9.	If student of the college, who is not a candidate for the particular examination or any person not connected with the college indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the college expulsion from the examination hall and cancellation of the performance in that course and all other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses of that semester/year. The candidate is also debarred and forfeits the seat.  Person(s) who do not belong to the College will be handed over to police and, a police case will be registered against them.
10.	Comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that course and all other courses the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the courses of that semester/year.
11.	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that course and all other courses the candidate has appeared including practical examinations and project work of that semester/year examinations.
12.	If any malpractice is detected which is not covered in the above clauses 1 to 11 shall be reported to the Principal for further action to award suitable punishment.	

Note:

- i) **All malpractices cases are to be handled by the Chief Controller with a committee consist of Controller of Examinations, HOD concerned and subject expert.**