



Velagapudi Ramakrishna
Siddhartha Engineering College
(Approved by AICTE, Accredited by NBA, and ISO 9001: 2000 Certified)
(An Autonomous College under the Jurisdiction of Acharya Nagarjuna University)
Vijayawada – 520 007

**Academic Regulations for Autonomous Stream: 2006-2007 Batch
(Common to all branches)**

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1. INTRODUCTION

Academic Programmes of the institute are governed by rules and regulations as approved by the Academic Council, which is the highest Academic body of the Institute.

These academic rules and regulations are applicable to the students admitted during academic year 2006-07 into first year of four year undergraduate programme offered by the college leading to Bachelor of Technology (B.Tech) degree in the disciplines viz., Civil Engineering, Computer Science and Engineering, Electronics and Communication Engineering, Electrical and Electronics Engineering, Electronics and Instrumentation Engineering, Information Technology, Mechanical Engineering and Production Engineering..

- 1.1 Velagapudi Ramakrishna Siddhartha Engineering College, Vijayawada, an autonomous institution, follows year wise pattern for B.Tech Ist year (students admitted during 2006-07) and semester pattern for 2nd, 3rd and 4th years of its undergraduate B.Tech programmes with internal and external evaluation(for 2006-07 batch only)
- 1.2 **Year wise Pattern for First year:** The first year consists of 40 week duration including instruction, evaluation, declaration of results etc. The first year shall have a minimum of 180 instruction days with at least 35 to 40 contact hours per week.
- 1.3 **Semester Pattern for 2nd, 3rd and 4th years:** Each academic year shall be divided into two semesters, each of 20 week duration, including instruction, evaluation, declaration of results etc. Each semester consists of a minimum of 90 instruction days with at least 30 to 35 contact periods per week

2. PROGRAMMES OFFERED (UNDER GRADUATE)

Presently, the college is offering Under Graduate programmes in the following disciplines:

- Civil Engineering (CE)
- Computer Science and Engineering (CS)
- Electronics and communication Engineering (EC)
- Electrical and Electronics Engineering (EE)
- Electronics and instrumentation Engineering (EI)
- Information Technology (IT)
- Mechanical Engineering (ME)
- Production Engineering (PE)

3. ELIGIBILITY CRITERIA FOR ADMISSION

The eligibility criteria for admission into 1st year B.Tech programme shall be as mentioned below:

- Seats in each programme in the Institution are classified into CATEGORY A (80% of intake) and CATEGORY B (20% of intake).

3.1 Category – A Seats:

- The candidate shall be of Indian National
- The candidate should have completed 16 years of age as on 31st December of the Academic year for which the admissions are being conducted.
- The candidate should have passed the qualifying examination (10+2) or equivalent on the date of his/her counseling for admission and secured the rank at the Common Entrance Test conducted by the State and also satisfy other conditions laid down in the G.O.s.
- The candidate should satisfy Local/Non-Local status requirement as laid down in the Andhra Pradesh Educational Institutions (Regulation of Admissions) Order, 1974 as subsequently amended.

3.2 Category - B Seats:

- The candidate shall be of Indian National or a Non-Resident Indian.
- The candidate should have completed 16 years of age as on 31st December of the Academic year for which the admissions are being conducted.
- 15% of Category B seats are available to NRI candidates who have passed the qualifying examination with not less than 60% of aggregate marks or Cumulative Grade Point Average (CGPA) equivalent to 6 on a scale of 10.
- 5% seats are available to candidates from other states and Union Territories of India who have passed the qualifying examination and secured rank in AIEEE.
- Vacant seats if any may be filled with eligible candidates including those securing not less than 60% of aggregate marks or 60% in Group subjects in the qualifying examination.

3.3 Category: Lateral Entry

- 10 percent of the candidates shall be admitted into the II nd year Ist semester directly, based on the rank secured by the candidate at Engineering Common Entrance Test (ECET (FDH)) in accordance with the instructions received from the Convener, ECET and Government of Andhra Pradesh.
- The candidate shall also satisfy any other eligibility requirements stipulated by the Acharya Nagarjuna University and / or the Government of Andhra Pradesh from time to time.

4. PROGRAMME STRUCTURE

Every course of the B.Tech programme will be placed in one of the following categories, listed in Table 1.

Sl.No	Courses	Minimum Credit Requirements
1.	Basic Science Core Courses	≥ 24
2.	Basic Engineering Sciences Courses	≥ 24
3.	Humanities and Social Sciences Courses	≥ 08
4.	Programme Core Courses	≥ 75
5.	Elective Courses	≥ 16
6.	Department/Programme Major Project	$= 08$
7.	Mandatory learning courses	≥ 05
8.	Student Practice Courses*: <ul style="list-style-type: none"> • Research orientation • Industry practice • Self learning • Co-curricular participation • Extra- curricular participation • NSS • NCC • Social Service • Rural development • Yoga • Educational tour • Summer Term Course • Practice School • Personality development programme 	≥ 03

* Students will have to participate and earn a minimum of 3 credits during the entire tenure of the degree. Each practice course will earn 1 credit

Table 1 : Categories of Courses

4.1 Curriculum plan and Scheme of instruction

A common curriculum plan is devised for all first year students admitted into the first year B.Tech programme during the academic year 2006-07. The recommended composition of courses and scheme of instruction for the first year is given separately along with the syllabi. All courses of undergraduate programmes shall have a unique code.

4.2 Course code and Course Numbering Scheme

Course Numbers are denoted by five digit unique alpha numeric characters. First two digits represent the year pattern courses or semester pattern courses. The year pattern (First year) courses are represented with BT and the semester pattern courses represented with the department code as mentioned in Table 2.

Department Code	Name of the Department
BT	First Year courses
CE	Civil Engineering Department courses
CS	Computer Science and Engineering Department courses
EC	Electronics & Communication Engineering Department courses
EE	Electrical & Electronics Engineering Department courses
EI	Electronics and Instrumentation Engineering Department courses
IT	Information Technology Department courses
ME	Mechanical Engineering Department courses
PE	Production Engineering Department courses

Table 2 : First and Second digits Description

Third digit represents the year of offering.

THIRD DIGIT	DESCRIPTION
1	First year course
2	Second Year Course
3	Third Year Course
4	Fourth Year Course

Table 3 : Third digit Description

Fourth digit is represented in the following manner:

FOURTH DIGIT	DESCRIPTION
0	Year pattern Theory course
1	First semester theory course
2	Second semester theory course
5	First year/semester Lab course
6	Second semester lab course

Table 4 : Fourth digit Description

Fifth digit represents course number as prescribed by the concerned BOS.

For example:

BT 107 indicates that the first two characters indicate the course offered in first year, third digit represents the year of offering, fourth digit is described as mentioned in table 4, and the fifth digit represents the course number as prescribed by BOS.

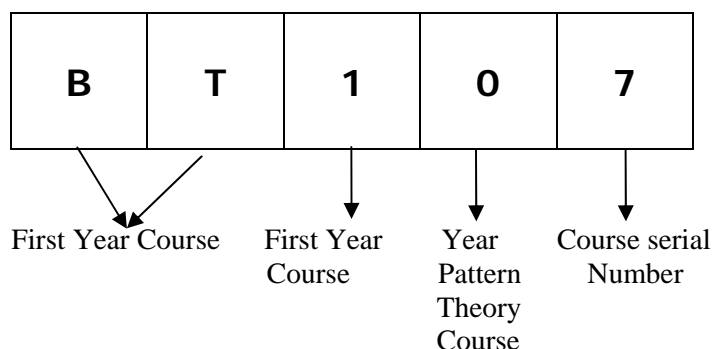


Figure 1: Course code description for I/IV course

CS 414 indicates that, the course is offered by Computer Science and Engineering Department (CS); and offered in fourth year(4), first semester(1), and the course number in that semester (4).

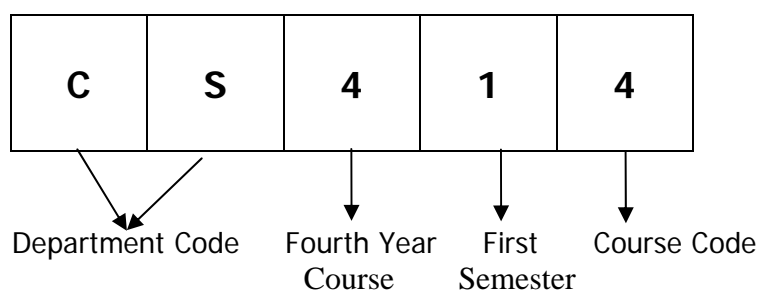


Figure 2 : Course code description for semester courses

4.3 Scheme of Instruction for I / IV B.Tech (Annual Pattern):

Scheme of instruction for I/IV (2006-07 batch) is given separately along with the syllabi.

4.4 Scheme of Instruction for 2nd, 3rd and 4th Years (Semester pattern):

The scheme of instruction and exact syllabi of all undergraduate programmes are given separately.

4.5 Contact Hours and Credits

Every Course comprises of specific Lecture-Tutorial-Practical (L-T-P) Schedule. The Course Credits are broadly fixed based on the following norms:

- Lectures / Tutorials -One period per week is assigned one credit.
- Practical - 3-period session per week is assigned 2 credits
- Practical - 2-period session per week is assigned 1 credit.
- Practice course / Mini project having even number of periods (X) per week are assigned X/2 credits. In case of odd number of periods (X) per week are assigned X/2 + 0.5 credits.
- Major project shall have 8 credits
- However, some courses are prescribed with fixed number of credits depending on the subject complexity and importance.

4.6 Theory / Tutorial classes

Each course is prescribed with fixed number of lecture periods per week. During lecture periods, the course instructor(s) shall deal with the concepts of the course. For certain courses, tutorial periods are prescribed, to give exercises to the students and to closely monitor their learning ability.

4.7 Laboratory / practical / practice classes

A minimum prescribed number of experiments / drawings / jobs / programs have to be performed by the students, who shall complete these in all respects and get the record certified by the concerned Head of the Department. Only such students are eligible to appear for the External Examination in that practical / practice / drawing course.

4.8 Programme Credits

4.8.1. Each discipline of B.Tech programme is designed to have a total of 210 to 235 credits, and the student shall have to complete the courses and earn credits as prescribed by concerned BOS.

4.8.2. Students joining the undergraduate programme in the second year first semester directly through Lateral Entry System (LES) shall have to complete the credits ranging from 160 to 185.

5 DURATION OF THE PROGRAMME

The duration of the programme is four academic years consisting of one year pattern in the first year and six semesters in the subsequent 3 academic years. A student is permitted to complete the undergraduate programme in a stipulated time frame of 8 years from the date of joining. Students joining the undergraduate programme in the second year first semester directly through lateral Entry System (LES) shall have to complete the programme in a stipulated time frame of 6 years from the date of joining.

5.1 Change of Branch

Normally a student admitted to a particular branch of the undergraduate programme will continue studying in that branch till completion. However, the Institute may permit a student to change from one branch of studies to another after the first Year, in accordance with the provisions laid down by Acharya Nagarjuna University and or Government of Andhra Pradesh. Change of branch shall be strictly done in the order of merit of the applicants. For this purpose the GPA/marks obtained at the end of the first year shall be considered. In case of a tie, the aggregate marks of the first year of the students are considered. Change of branch will not be permitted after completion of second year first semester.

6 MEDIUM OF INSTRUCTION

The medium of instruction and examination is English.

7 SYLLABUS (Enclosed at the end of this document)

8 ATTENDANCE REGULATIONS AND CONDONATION

Regular course of study means a minimum average attendance of 75% in all the courses computed by totaling the number of periods of lectures, tutorials, drawing, practical and project work as the case may be, held in every course as the denominator and the total number of periods attended by the student in all the courses, as the numerator.

Condonation of shortage in attendance may be recommended on genuine medical grounds, provided the student puts in at least 65% attendance as calculated above and provided the principal is satisfied with the genuineness of the reasons and the conduct of the student.

- Students, having shortage of attendance, shall pay Rs 3.00/-per period of absence, subject to a minimum of Rs 100/-.
- A student, who does not satisfy the attendance requirement, shall have to repeat that year/semester.

9 EXAMINATIONS AND SCHEME OF EVALUATION

9.1 Theory Courses: Internal Examinations: 30 marks

- **5 marks** in each theory course shall be given for those students who put in attendance in a graded manner as given in Table 5.

S. No	Attendance Range	Marks Awarded
1	Attendance of 75% and above but less than 80%	3 Marks
2	Attendance of 80% and above but less than 90%	4 Marks
3	Attendance of 90% and above	5 Marks

Table 5: Attendance based marks system

9.1.1 For I/IV B.Tech 2006-07 batch :

- 15 marks** are earmarked for Mid term examinations. There shall be three mid term examinations in every theory course in the first year. The marks shall be awarded considering the average of best two mid term examination marks in each course.
- 10 marks** are earmarked for assignments. There shall be three assignment examinations in every theory course. The marks shall be awarded considering the average of best two assignment examination marks in each course.

9.1.2 In each of the semesters of II/IV, III/IV and IV/IV B.Tech:

- 15 marks are awarded for two mid term examinations** in every theory course. The mid term marks shall be awarded giving a weightage of 10 marks out of 15 earmarked for mid term examinations (2/3rd approx.) in which the student scores more marks and the remaining 5 marks (1/3rd approx.) for the mid term examination in which the student scores less marks
- 10 marks are awarded for:** assignment tests, online tests, seminars, projects quizzes, home assignments, surprise tests, open book tests etc.

9.2 Lab Courses (Experimental / Drawing / Workshop / Practice) : Internal Evaluation : a) 25 marks for lab courses b) 50 marks for lab / experimental / practice courses and c) 75 marks for drawing/practice and allied courses

- In the case of lab / practical courses, the internal marks shall be awarded based on the day-to-day laboratory / class-work assessment including submission of record (10 marks) and laboratory examinations and Quiz / Viva-voce (15 marks).
- In the case of lab / experimental / practice courses, the internal marks shall be awarded based on the day-to-day assessment (35 marks) and Quiz / Viva-voce (15 marks).
- For drawing/practice and allied courses, 25 marks are awarded based on day-to-day assessment, including the submission of drawing sheets/records and remaining 50 marks are awarded by conducting the internal examination towards end of the academic session.
- Candidates, who secure less than 40% marks in Courses (Experimental / Drawing / Workshop / Practice) which don't have external examinations, will have to reappear the end semester internal examinations conducted subsequently.

9.3 External Examinations

9.3.1 Theory Courses: 70 marks

- The external examination shall be conducted at the end of the year/semester. The question paper shall be set by the examiner (from the list of examiners approved by academic council) in the following pattern :

- **Part–A:** Shall contain 10 one mark questions. A minimum of two Questions will be given from each unit of the syllabus out of four units as prescribed by concerned BOS.
- **Part–B:** There shall be two questions from each unit with internal choice. Each question carries 15 marks. Each Theory course shall consist of four units of syllabus.

9.3.2 Lab Courses (Practical / Practice / Workshop): 50 marks

- 35 marks are awarded for experiments/job works and 15 marks are awarded for viva-voce examination.

10 SUPPLEMENTARY EXAMINATIONS

The supplementary examinations will be conducted along with regular semester end examinations. Supplementary examinations are conducted to a maximum number of four continuous attempts subsequent to the regular examination. Supplementary examinations will be conducted in the equivalent courses as prescribed by concerned BOS, thereafter.

11 CONDITIONS FOR PASS AND AWARD OF CREDITS, GRADES AND GRADE POINTS

11.1 Conditions for pass and award of credits:

- A student shall be declared to have passed in individual course(s) if he/she secures a minimum of 40% aggregate marks in each theory course, subject to a minimum of 40% marks in external examination, and 50% aggregate marks in each Practical course, subject to a minimum of 50% marks in external examination.
- The student has to pass the failed course(s) by appearing the supplementary examinations.
- On passing a course(s) of a programme the student shall earn the credits assigned to that course(s).

11.2 Method of Awarding Letter grades and grade points

A Letter grade and grade points will be awarded to a student in each course including a laboratory course, based on his/her performance evaluated through a prescribed scheme of evaluation.

11.2.1 Method of awarding absolute grades and grade points

The absolute grading method is followed, based on the total marks obtained in internal and external examinations. Grades and grade points are assigned as per the Table 6.

Marks obtained	Grade	Description of grade	Grade Points (GP)
≥ 85	A+	Excellent	10.0
< 85 and ≥ 75	A	Very Good	9.00
< 75 and ≥ 65	B	Good	8.00
< 65 and ≥ 55	C	Fair	6.00
< 55 and ≥ 40	D	Pass class	4.00
< 40	F	Fail	*
Not Appeared the exam(s)	N	Absent	

* The student has to pass in the subsequent examinations

Table 6: Method of Awarding Absolute Grades and Grade Points

11.3 Calculation of Grade Points Average (GPA)* for year / semester

The performance of each student at the end of the each year/semester is indicated in terms of GPA. The GPA is calculated as below:

$$\text{GPA (For year/semester)} = \frac{\sum(\text{CR X GP})}{\sum\text{CR}} \quad (\text{for all courses passed in year/semester})$$

Where CR= Credits of a course

GP = Grade points awarded for a course

* GPA is calculated for the candidates who passed all the courses in that year/semester.

11.4 Calculation of Cumulative Grade Point Average (CGPA) for Entire Programme.

The CGPA is calculated as below:

$$\text{CGPA} = \frac{\sum(\text{CR X GP})}{\sum\text{CR}} \quad (\text{for entire programme})$$

Where CR= Credits of a course

GP = Grade points awarded for a course

- a) The CGPA is awarded only when the student passes in all the courses prescribed for the programme. The student is eligible for the award of the B.Tech degree with the class as mentioned Table 7.

CGPA	Class
≥ 7.0	First class with Distinction
≥ 6.0 and < 7.0	First class
≥ 5.0 and < 6.0	Second Class
< 5.0	Pass class

Table 7: Award of class based on CGPA

11.5 Transitory Regulations

A candidate, who is detained or discontinued in the year/semester, on readmission shall be required to pass in all the courses in the curriculum prescribed for such batch of students in which the student joins subsequently. However, exemption will be given to those candidates who have already passed in such courses, which he/she had passed in the earlier semester(s) he/she was originally admitted into.

- 11.5.1 A student who is following the Acharya Nagarjuna university curriculum, detained due to lack of academics/attendance at the end of the first semester of second year, shall join the autonomous batch of Second Year first semester. Such students will study all the courses prescribed for that batch, in which the student joins. The first year marks shall not be converted in to course credits. However, the student has to clear all his first year backlog subjects by appearing the supplementary examinations, conducted by Acharya Nagarjuna University and courses prescribed in Autonomous stream for the award of Degree. The class will be awarded based on the academic performance of a student excluding the first year. Such candidates will be considered on par with lateral entry candidates of autonomous stream and will be governed by the regulations applicable to lateral entry candidates.

- 11.5.2 A student who is following the Acharya Nagarjuna university curriculum, detained due to lack of academics/attendance at the end of the second semester of second year and also at the subsequent semesters, shall join with the autonomous batch at the appropriate semester. Such candidates shall be required to pass in all the courses in the programme

prescribed by concerned BOS for such batch of students, to be eligible for the award of degree. However, exemption will be given in all those courses of the semester(s) of the batch, which the candidate joins now, which he/she had passed earlier. The student has to clear all his backlog subjects by appearing the supplementary examinations, conducted by Acharya Nagarjuna University and Autonomous stream for the award of Degree. The class will be awarded based on the academic performance of a student in the ANU pattern.

11.6 Conditions for Promotion

A student shall be eligible for promotion to II/IV B.Tech programme, if he/she satisfies minimum attendance requirements as stipulated.

A student shall be eligible for promotion to III/IV / IV/IV B.Tech programme, if he/she satisfies the minimum required attendance as stipulated and should acquire the minimum number of credits as per Table 8.

For admission	Minimum Credits Required	
	For IV year B.Tech Candidates	For lateral entry candidates
III year 1st Semester	50	-
IV Year 1st Semester	80	50

Table 8: Promotion criteria

11.7 Grade Card

The grade card issued shall contain the following:

- a) The credits for each course offered for that year / semester
- b) The marks obtained in each course in that year / semester
- c) The letter grade obtained in each course
- d) The grade points allotted for each course
- e) The SGPA/CGPA
- f) Total number of credits earned by the student up to the end of that year/semester

11.8 Marks Card

The Marks card issued to the student at the end of the year/semester shall contain the following:

- a) The internal marks scored by each student in each course
- b) The external marks scored by each student in each course
- c) The total marks scored by each student in each course

12 REVALUATION

12.1.1 The students can submit the applications, within 6 working days from the date of announcement of marks / declaration of results along with the revaluation fee receipt to the Principal for revaluation of his/her answer script(s) of theory course(s), if he/she is not satisfied with marks obtained.

12.2 The Controller of Examinations shall arrange for revaluation of those answer script(s).

12.3 A new external examiner, other than the first examiner, shall revalue the answer script(s).

13 READMISSION CRITERIA

A candidate, who is detained due to lack of attendance/academics, shall have to get readmission after paying required fees into the same semester.

14 BREAK STUDY

Student, who discontinues the studies for what so ever may be the reason, can get readmission into B.Tech programme after break-in study only with the prior permission of the Acharya Nagarjuna University provided the break period does not exceed three years. Such candidates shall follow the transitory regulations applicable to such batch in which he/she joins.

15 ELIGIBILITY FOR AWARD OF B.TECH. DEGREE

The B.Tech. Degree shall be conferred on a candidate who has satisfied the following requirements.

- 15.1 The candidate must have, after admission into B.Tech. Degree Programme of the institute pursued the course of study for not less than four academic years in case of candidate who joins the programme after 10 + 2 and not less than 3 academic years in case of the candidate who joins through lateral entry category.
- 15.2 The candidate must have satisfied the conditions for pass in all the subjects/courses prescribed for that student as stipulated in regulation 11.

16 BETTERMENT/IMPROVEMENT OF CLASS / GPA

- 16.1 A candidate, after becoming eligible for the award of the Degree, may reappear for the external Examination in any of the theory courses as and when conducted, for the purpose of improving the aggregate and the class. But this reappearance shall be within a period of two academic years after becoming eligible for the award of the Degree.
- 16.2 However, this facility shall not be availed of by a candidate who has taken the Original Degree Certificate. Candidates shall not be permitted to reappear either for Sessional Examination or for external Examinations in Practical courses (including Project Viva-voce) for the purpose of improvement.
- 16.3 A single Marks Statement shall be issued to the candidate after incorporating the marks/grades secured in subsequent improvements.
- 16.4 A consolidated Marks Statement shall be issued to the candidate indicating the CGPA along with the Provisional Certificate.

17 AWARD OF RANK

The rank shall be awarded based on the following:

- 17.1 Ranks shall be awarded in each branch of study for the top ten students appearing for the Regular external Examinations.
- 17.2 Only such candidates who pass the Final year examination at the end of the fourth academic year after admission as regular final year students along with the others in their batch and become eligible for the award of the Degree shall be eligible for the award of rank. Candidates, who loose one or more years of study for any reason whatsoever are not eligible for the award of rank.
- 17.3 For the purpose of awarding rank in each branch, the aggregate of marks (Internal + External) of all courses (put together) in all the four years, secured at the first attempt only shall be considered.
- 17.4 Award of prizes, scholarships, or any other Honors shall be based on the rank secured by a candidate, consistent with the desire of the Donor, wherever applicable.

18 INSTANT EXAMINATION

Candidate(s), who failed in one Theory or Lab course of IVth year IInd semester, can appear for Instant examination, conducted within 15 days after declaration of the revaluation results.

19 OTHER MATTERS

19.1 The physically challenged candidates who have availed additional examination time during their Intermediate/EAMCET examinations will be given additional examination time on production of relevant proof/documents.

19.2 Candidates who failed to register for all papers for the semester-end examinations shall not be permitted to continue the subsequent semester. Registration means obtaining a hall ticket for the said examination.

20 AMENDMENTS TO REGULATIONS

The Academic council may, from time to time, revise, amend, or change the regulations, schemes of examinations, and/or syllabi.