

CBCS (R16)

REGULATIONS AND COURSE STRUCTURE

B.Tech. FOUR YEAR DEGREE COURSE
(Applicable for the batches admitted from 2016-17)



SWARNANDHRA COLLEGE OF ENGINEERING & TECHNOLOGY
Seetharampuram, Narsapur – 534 280, W.G.Dt.
Andhra Pradesh

(AUTONOMOUS)

ACADEMIC REGULATIONS

1. INTRODUCTION

Academic Program of the institute are governed by rules and regulations 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 the academic year 2016-17 into first year of four year undergraduate program offered by the college leading to Bachelor of Technology (B. Tech) degree in the respective discipline.

2. ADMISSIONS:

2.1 Admission into first year of any Four Year B. Tech Program of study in Engineering: Admissions into first year of B.Tech Program of Swarnandhra College of Engineering & Technology (**Subsequently referred to as SCET**) will be as per the norms stipulated by Jawaharlal Nehru Technological University Kakinada & Govt. of Andhra Pradesh. Admissions in each program in the Institution are classified into **CATEGORY – A**, through convener, EAMCET and **CATEGORY- B** filled by the college management.

2.2 Admission into the Second year (Lateral Entry) of any Four year B. Tech Program of study in Engineering: The candidates should have passed the qualifying exam. (B.Sc. graduation & Diploma holders) for admission into the 3rd semester directly, based on the rank secured by the candidate at Engineering Common Entrance Test [ECET for (FDH)] in accordance with the instructions received from the Convener, ECET and Government of Andhra Pradesh. The candidate has to satisfy the other eligibility requirements stipulated by the JNT University Kakinada and / or the Government of Andhra Pradesh from time to time.

2.3 Admissions with advance standing: These may arise in the following cases:

- a) When a student seeks transfer from other colleges to SCET and desirous to pursue the study at SCET in an eligible branch of study.
- b) When students of SCET get transferred from one regulation to another regulation or from previous syllabus to revised syllabus.
- c) When a student after long discontinuity rejoins the college to complete his/her Program of study for the award of degree.
- d) When a student is not able to pursue his/her existing Programme of study but wishes to get transferred to another Program of study.

These admissions may be permitted by the Academic Council of SCET as per the norms stipulated by the statutory bodies and Govt. of Andhra Pradesh. In all such cases for admission, when needed, permissions from the statutory bodies are to be obtained and the Program of study at SCET will be governed by the transitory regulations.

3. PROGRAMMES OFFERED (UNDER GRADUATE)

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

- Computer Science and Engineering (CSE)
- Electronics and communication Engineering (ECE)
- Electrical and Electronics Engineering (EEE)
- Information Technology (IT)
- Mechanical Engineering (ME)
- Civil Engineering (CE)

3.1 Structure of the Program:

Preamble:

It is emphasized in UGC Guidelines on Choice Based Credit System (CBCS), that the important measures taken to enhance academic standards and quality in higher education include innovation and improvements in curriculum, teaching-learning process, examination and evaluation systems, besides governance and other matters. It is also suggested to adopt grading system in place of conventional system of marks and percentages.

The proposed CBCS for Swarnandhra College of Engineering and Technology provides flexibility in designing curriculum and assigning credits based on the course content and hours of teaching. The choice based credit system provides advantageous approach in which the students can register courses of their choice, learn at their own pace, undergo additional courses and acquire more than the required credits, and adopt an interdisciplinary approach through open electives.

Key words CBCS, such as Course, credit, credit point, CGPA, SGPA, Grade Point, Letter Grades, Foundation Courses (FC), Program Core Course (PCC) and Elective Courses (EC) as given in UGC guidelines are used in this proposal with the same definitions.

Each Program of a Discipline or branch of study will consist of:

- i). Foundation courses in Basic Sciences, Engineering Sciences and Humanities.
- ii). Program core courses to impart broad based knowledge needed in the concerned branch of study.
- iii). Elective courses from the discipline or interdisciplinary areas / industry related opted by the student based on his/her interest in specialization.

Each Program of study will be designed to have 35-40 theory courses and 20-25 laboratory courses. The distribution and types of courses offered from the above is indicated in the following table.

Foundation Courses – Basic Sciences & Humanities
Foundation Courses – Engineering Sciences
Program Core Courses in the branch of study
Elective Courses

Note: All components prescribed in the curriculum of any Program of study will be conducted and evaluated.

Contact hours: Depending on the complexity and volume of the course the number of contact hours per week will be determined.

Credits:

- One teaching hour of theory/tutorial class is equivalent to one credit.
- Two hours of Practical class is equivalent to one credit.
- Each theory or elective course will be (L-T-P-C) equal to 4-0-0-4 or 3-1-0-4 or 3-0-2-4 or 2-0-4-4 or 1-0-4-3. Further, the laboratory courses can be (L-T-P-C) equal to 0-0-2-1 or 0-0-4-2.

3.2 Curriculum for each Program of study:

- The Four year curriculum of any B. Tech Program of study in any branch of Engineering is formulated based on the guidelines mentioned in 3.1 and will be recommended by the concerned Board of Studies and is approved by the Academic council of the college.
- In case of students admitted under lateral entry, the respective regular curriculum contents from 3rd semester onwards are to be pursued by them.

- In case of students admitted under advanced standing, the equivalence will be prepared by the concerned Board of Studies and the Academic Council has to approve the same.
- After approval from the Academic Council, the detailed curriculum will be prepared and made available to all the students along with the academic regulations.

3.3 Maximum duration of study and cancellation of admission:

Maximum duration permitted for any student to successfully complete the four year B. Tech. Program of study will be:

- Eight academic years in sequence from the year of admission for a normal student admitted into first year of any Program.
- Six academic years in sequence from the year of admission for a Lateral entry student admitted into second year of any Program.
- For students admitted with advanced standing, the maximum time for completion of Program of study, will be twice the period in terms of academic years in sequence, stipulated in the Program curriculum defined at the time of admission.
- In case, any student fails to meet the above applicable/eligible conditions for the award of degree, his/her admission stands cancelled.

4. **DURATION OF THE PROGRAMME AND MEDIUM OF INSTRUCTION:** The duration of the B. Tech. Program is four academic years consisting of eight semesters. The medium of instruction and examinations are in English. Students, who fail to fulfill all the academic requirements for the award of the degree within the prescribed duration as per article 3.3, will forfeit he/she admission in B. Tech course.

5. **MINIMUM INSTRUCTION DAYS:** Each semester will consist of 22 weeks duration with minimum of 110 working days which includes instruction, Mid semester examinations and Final examinations.

6. TRANSITORY REGULATIONS:

For students admitted under advance standing, these transitory regulations will provide the modus of operandi. At the time of such admission, based on the Program pursued (case by case)

- Equivalent courses completed by the student are established by the BOS of concerned discipline.
- Marks/Credits are transferred for all such equivalent courses and treated as successfully completed in the Program of study prescribed by SCET.
- A Program chart of residual courses not completed will be derived and a Program of study with duration specified will be prescribed for pursuit at SCET.
- Marks obtained in the previous system, as the case maybe, shall be converted to equivalent grades and CGPA..

All other modalities and regulations governing shall be the same as those applicable to the stream of students with whom; such a candidate is merged with current regulations.

7. DISTRIBUTION AND WEIGHTAGE OF MARKS:

- (i) In each semester the course of study consists of 5/6 theory subjects + 3 Laboratories. However, in the 8th semester there will be only 2 theory subjects in addition to the major project work.
- (ii) The performance of a student in each semester will be evaluated subject wise with a maximum of 100 marks for both Theory and Laboratories, where as Seminar, Soft Skills and Aptitude Lab and Mini Project/Internship at the end of respective semesters are evaluated internally for 50 marks each. The Main Project during 8th Sem is evaluated for 200 marks.

- (iii) **Seminar:** The seminar is internal evaluation. For the Seminar, the student shall collect the information on a specialized topic (thrust areas) and prepare a report showing his understanding over the topic and submit to the department, which shall be evaluated by the Head of the department, seminar supervisor and a senior faculty member. The seminar report shall be evaluated for 50 marks. A minimum of 50% of maximum marks shall be obtained to earn the corresponding credits.
- (iv) **Soft Skills and Aptitude Lab;** This lab is internal evaluation. This has two components, Soft Skills and Aptitude. Each will be evaluated separately for 50 marks in a semester and the average of two components shall be taken as the final score. A minimum of 50% of maximum marks shall be obtained to earn the corresponding credits.
- (v) **Mini Project/Internship:** This Mini Project/ Internship is internal evaluation. The mini project/Internship shall be carried out during the summer break for a minimum of 4 weeks after the 6th semester and to be completed before the start of the 7th Semester. A report has to be submitted at the beginning of the 7th semester for assessment by an internal evaluation committee comprising Head of the Department and two faculty of the department including the project Supervisor for 50 Marks. A minimum of 50% maximum marks shall be obtained to earn the corresponding credits.
- (vi) For each theory subject the distribution will be 40 marks for internal evaluation and 60 marks for the end semester examination. The internal evaluation of 40 marks consists of descriptive test for 30 marks and assignment for 10 marks.
- (vii) As part of internal assessment for each theory subject there will be 2 cycles of examinations. Each cycle consists of descriptive test for 30 marks and assignment for 10 marks which will be conducted for three units of syllabus. **Weighted average of two cycle's** performance will be considered for award of internal assessment. A weightage of 80% for the best cycle performance and 20% for second best cycle performance are given for internal evaluation.
- (viii) The **descriptive** examination question paper consists of three questions (at least one question from each unit) and all are need to be answered in 90 minutes.
- (ix) The **end semester** examination will be conducted for 60 marks covering total syllabus of the concerned subjects. In end examination pattern, **Part – A** consists of a compulsory questions from all units (Brainstorming/Thought provoking/Case study) for 12 marks. **Part – B** has **6 questions** (one question from each unit) of which **four questions** to be answered and valued for 48 marks.
- (x) End practical examination will be conducted for 60 marks by the teacher concerned and external examiner. For practical subjects there will be a continuous assessment during the semester for 40 internal marks with 20 marks for day-to-day work, including record valuation and 20 marks for internal test.
- (xi) For the subjects of design or drawing such as Engineering Drawing, etc., the distribution will be 40 marks for internal evaluation with 20 marks for day-to-day work, and 20 marks from two internal test (80% of first best + 20% of second best). End examination will be conducted for 60 marks.
- (xii) **Main Project:** The project work carried out by the students during 8th semester is evaluated for internal assessment and external examination.

a) Internal Assessment: Internal Assessment will be carried out by Projects internal assessment committee consisting of 1) Head of the Department 2) Supervisor and 3) Senior faculty member appointed by the Principal.

b) External Examination: External Examination will be conducted by Project external examination committee consisting of 1) Head of the Department 2) Supervisor and 3) External member selected from the panel of examiners.

Total marks to be awarded for Project work is 200, of which 60 marks will be for Internal Evaluation and 140 marks for External examination through presentation / viva - voice by the student. The internal evaluation will be on the basis of two seminars on the topic of the project.

(xiii) **Mandatory Courses:** Non-Credit Courses: These courses are mandatory for students and students have to successfully complete these courses.

a. IPR and Ethics in 5th Semester

b. Certificate Course in 6th Semester (MOOCs or Professional Certificate)

The evaluation shall be totally internal and students should get satisfactory result to get B. Tech degree. Students should produce valid certificate for certificate course to get satisfactory result.

(xiv) **Skill Based Lab (Elective):** This shall be conducted in 7th semester on thrust areas of respective departments. Students shall register and put up a minimum of 75% attendance. Based on their performance, examination to be conducted like other Labs.

(xv) **Open Electives:** Students are to choose one Open Elective (OE – I) during 6th Semester and one Open Elective (OE – II) in 8th Semester from the list of Open Electives given in the Course Structure. However, students cannot opt for an Open Elective Subject offered by their own (parent) Department, if it is already listed under any category of the subjects offered by the parent Department in any Semester.

8. **GAP YEAR CONCEPT:** Outstanding students who wish to pursue entrepreneurship full time can take break of one year, after the 4th Semester with prior approval from the Principal (as per the recommendations of the Central Committee). This may be extended to two years at the most and these two years would not be counted for the time for the maximum time for graduation.

9. **ATTENDANCE REGULATIONS AND CONDONATION:**

- (i) A student will be eligible to appear for end semester examinations, if he/she acquired a minimum of 75% of attendance in aggregate of all the subjects.
- (ii) Condonation of shortage of attendance in aggregate up to 10% on medical grounds (Above 65% and below 75%) in any semester may be granted by the College Academic Committee.
- (iii) Prescribed Condonation fee shall be payable by the student to appear for the end examination.
- (iv) A Student will not be promoted to the next semester unless he/she satisfies the attendance requirement of the present semester as applicable. They may seek re-admission for that semester as and when offered consecutively by the Department.
- (v) Shortage of Attendance below 65% in aggregate in no case be condoned
- (vi) Students with less than 65% of attendance in any semester are not eligible to take up their end examination of that particular semester and their registration for examination shall be cancelled.
- (vii) Attendance may also be condoned for those who participate in Intercollegiate/university sports, co- and extracurricular activities provided their attendance is in the minimum prescribed range for the purpose (>65%) and recommended by the concerned authority. He/ She shall pay the prescribed condonation fee.
- (viii) A student will be condoned only four times for regular student and three times for lateral entry students during entire course of study.

10. MINIMUM ACADEMIC REQUIREMENTS:

The following academic requirements have to be satisfied in addition to the attendance requirements mentioned in **S.No.9**.

- (i) A student will be deemed to have satisfied the minimum academic requirements and earned the credits allotted to each theory or practical design or drawing subject or project if he/she secures not less than a minimum of 35% of marks exclusively in the end semester examinations in each of the subjects, for which the candidate had appeared. However, the candidate should have secured a minimum of 40% marks in both external and internal components put together to declare eligible for pass in the subject.
- (ii) A student will be promoted from first semester to second semester, second semester to third and third to fourth semester, if he/she satisfies the minimum attendance requirement.
- (iii) A student will be promoted from 4th Semester to 5th Semester, if he/she fulfills the academic requirements of 40% of the credits up to 4th Semester from all the examinations (Regular and supplementary) whether or not the candidate takes the examinations.
- (iv) A student will be promoted from 6th to 7th Semester, only if he/she fulfills the academic requirements of 40% of the credits up to 6th Semester from, all the examinations (regular and supply) whether or not the candidate takes the examinations.
- (v) There will be supplementary examinations along with the regular semester examinations enabling the students to give a fair chance to appear in the subject if any failed.
- (vi) Candidate who fails in 8th Semester can appear for Advanced Supplementary Examinations soon after the announcement of result.

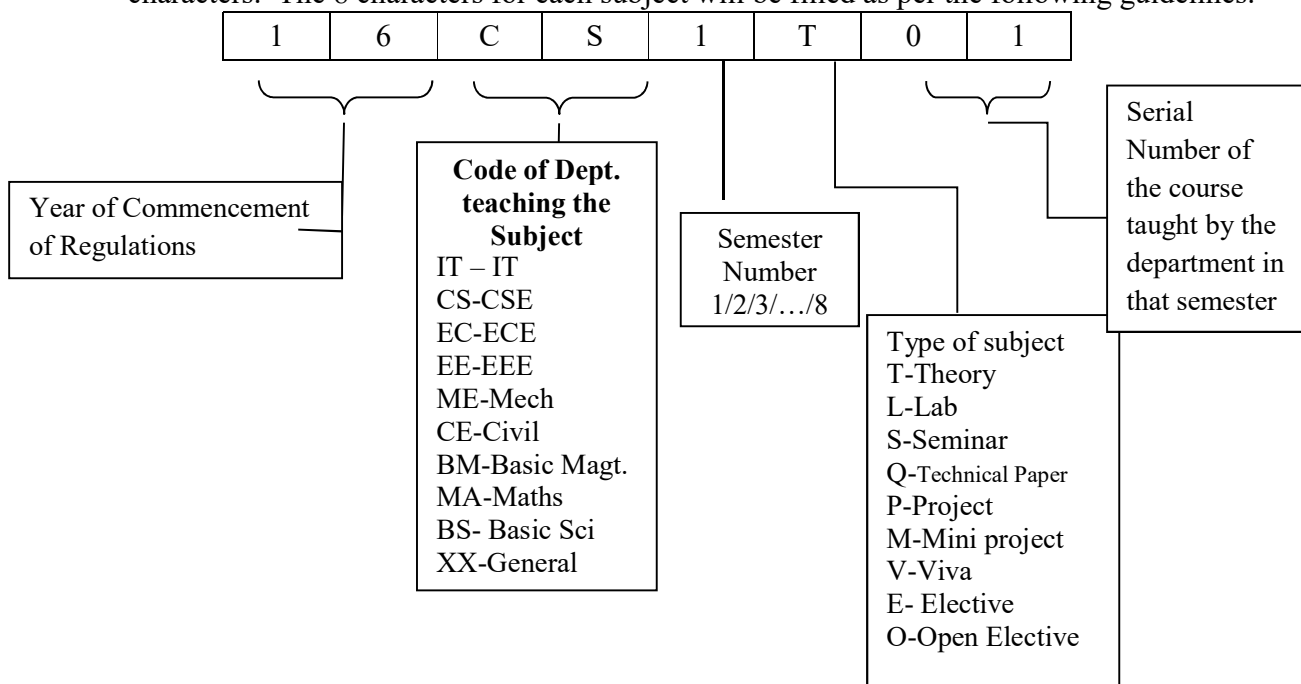
11. ELIGIBILITY FOR AWARD OF DEGREE:

A student shall be eligible for award of the B.Tech. Degree if he/she fulfills all the following conditions:

- (i) Pursued a course of study for a stipulated period of four years and not more than eight years.
- (ii) Registered and successfully completed all the components prescribed in the program of study to which he/she is admitted.
- (iii) Obtained CGPA greater than or equal to 5 (minimum requirements for pass).
- (iv) Has no dues to the institute, hostels, libraries, NCC/NSS etc., and No disciplinary action is pending against him/her.

12. COURSE CODE & COURSE NUMBERING SCHEME:

The subject codes will be given by the department teaching the subject. Each subject code contains 8 characters. The 8 characters for each subject will be filled as per the following guidelines.



13. GRADING SYSTEM:

13.1 Award of Grade:

(i) Grade Point Average (GPA):

a) The Grade Point Average (GPA) will be calculated according to the formula $GPA = \frac{\sum C_i G_i}{\sum C_i}$

Where C_i = number of credits for the subject i

G_i = grade points obtained by the student in the subject.

b) To arrive at Cumulative Grade Point Average (CGPA), the formula is used considering the student's performance in all the courses taken in all the semesters completed up to the particular point of time.

$$CGPA = \frac{\sum C_i G_i}{\sum C_i}$$

Where C_i = number of credits for the subject i

G_i = grade points obtained by the student in the subject.

(ii) After a student satisfies the requirements prescribed for the award of UG/PG Program he/she shall be placed in one of the following four grades. The award of the degree is based on CGPA on a grade point scale of 10.

CGPA	Award of Division
$\geq 7.50^*$	First Class with Distinction
≥ 6.50	First Division
≥ 5.50	Second Division
≥ 5.00	Pass Division
< 5.00	Unsatisfactory

* In addition to the required CGPA of 8, the student must have necessarily passed all the courses of every semester in the minimum stipulated period for the programme.

13.2 Award of Grade in Each Semester:

(i) Based on the student performance during a given semester, a final letter grade will be awarded at the end of the semester for each subject. The letter grades and the corresponding grade points are as given in the Table.

Percentage of Marks Scored	Letter Grade	Grade points
≥ 90	S	10
80 - 89	A	9
70-79	B	8
60-69	C	7
50-59	D	6
40-49	E	5
< 40	F	Fail

(ii) A student earns a minimum of 5 grade points (E grade) in a subject is declared to have successfully completed the subject, and is deemed to have earned the credits assigned to that subject. However it should be noted that a pass in any subject/term paper/seminar/project/mini project shall be governed by the rules mentioned in S.No.7.

(iii) Grade Sheet: A grade sheet (memorandum) will be issued to each student indicating his/her performance in all courses taken in that semester and also indicating the grades.

(iv) Transcripts: After successful completion of the total programme of study, a Transcript containing performance of all academic years will be issued as a final record. Duplicate transcripts will also be issued up to any point of study to any student on request and by paying the stipulated fee in force.

(v) Candidates shall be permitted to apply for revaluation within the stipulated period with payment of prescribed fee.

(vi) The Academic Council has to approve and recommend to the JNTUK, Kakinada for the award of a degree to any student.

14. SUPPLEMENTARY EXAMINATIONS: In addition to the Regular Final Examinations held at the end of each semester, Supplementary Final Examinations will be conducted during the academic year. A student can appear for any number of supplementary examinations till he/she clears all courses which he/she could not clear in the first attempt. However the maximum stipulated period cannot be relaxed under any circumstance.

15. ADVANCED SUPPLEMENTARY EXAMINATIONS: Candidate who fails the subjects in 8th Semester can appear for Advanced Supplementary Examinations.

16. ACADEMIC REGULATIONS FOR B.TECH (LATERAL ENTRY SCHEME):

- i. The students have to acquire 132 credits from 3rd Semester to 8th Semester of B. Tech Program (regular) for the award of the degree.
- ii. Students, who fail to fulfill the requirement for the award of the degree in 6 consecutive academic years from the year of admission, shall forfeit their seat.
- iii. The same attendance regulations are to be adopted as per the rules mentioned in item No.9.
- iv. **Rules for Promotion in to Next Higher Class:** (6th Semester to 7th Semester): A student shall be promoted from 6th Semester to 7th Semester only if he/she fulfills the academic requirements of 40% credits up to 6th Semester.

17. CONDUCT AND DISCIPLINE:

Students admitted in SCET (Autonomous) are to be followed the conduct and discipline of the college and which will be framed from time to time.

18. MALPRACTICES: The Principal shall refer the cases of malpractices in internal assessment tests and Semester-End Examinations, to a Malpractice Enquiry Committee, constituted by him/her for the purpose. The principal shall take necessary action, against such cases based on the recommendations of the committee as per stipulated norms.

19. GENERAL:

- a) Wherever the words “he”, “him”, “his”, occur in the regulations, they include “she”, “her”, “hers”.
- b) The academic regulation should be read as a whole for the purpose of any interpretation.
- c) In case of any doubt or ambiguity in the interpretation of the above rules, the decision of The Principal is final and which is to be ratified by the Chairman of the Governing Body.
- d) The college may change or amend the academic regulations or syllabi at any time and the changes or amendments made shall be applicable to all the students with effect from the dates notified by the college.