

**SRI VENKATESWARA UNIVERSITY  
COLLEGE OF ENGINEERING  
TIRUPATI – 517 502  
(Autonomous Institute)**

**B.Tech Degree Programme (CBCS) Regulations-2016  
(To come into effect from the batch admitted in academic year 2016-17)**

**CHOICE-BASED CREDIT SYSTEM**

**1. Preamble:**

B.Tech Degree Programme is of four academic years with each academic year being divided into two consecutive (one odd + one even) semesters.

Choice-Based Credit System (CBCS) is a flexible system of learning and provides choice for students to select from the prescribed elective courses. A course defines learning objectives and learning outcomes and comprises of lectures/tutorials/laboratory work/field work/project work/viva/seminars/assignments/ presentations/ self-study etc. or a combination of some of these.

Under the CBCS, the requirement for awarding a degree is prescribed in terms of number of credits to be completed by the students.

The CBCS permits students to:

- i. choose electives from a wide range of elective courses offered by the Departments of the Institute.
- ii. undergo additional courses of interest
- iii. adopt an inter-disciplinary approach in learning
- iv. make the best use of expertise of the available faculty

**2. Minimum Qualification:**

A pass in Intermediate Examination conducted by the Board of Intermediate Education of Andhra Pradesh with Mathematics, Physics and Chemistry as optional subjects or any equivalent examination recognized by Sri Venkateswara University.

**3. Branches of Study:**

The branches of study in B.Tech Degree Programme are:

- i) Chemical Engineering
- ii) Civil Engineering
- iii) Computer Science and Engineering
- iv) Electrical and Electronics Engineering
- v) Electronics and Communication Engineering
- vi) Mechanical Engineering

#### 4. Semester:

Each semester shall consist of 18 weeks with a typical academic work of 30 hours/week equivalent to 90 actual instruction days. However, instructional days may be reduced up to 72, when necessary, with increased instructional hours per course per week per semester.

#### 5. Credits Definition:

A unit by which the course work is measured. It determines the number of hours of instructions required per week. One credit is equivalent to **one hour of teaching (lecture) or two hours of tutorial/practical work/field work per week.**

(Suggested by Principal : one credit is equivalent to one hour of teaching (lecture / tutorial) or two hours of practical work / field work per week on 2-09-2016 as per UGC Guidelines)

#### 6. Classification of Courses: Courses in UG programme comprise of Basic, Core, Elective and Audit courses.

##### Basic Courses:

Basic Courses may be of two types; Compulsory Basic and Elective Basic. Compulsory Basic courses are the courses based upon the content that leads to Knowledge enhancement. They are mandatory for all branches. Elective Basic courses are value-based and are aimed at man-making education.

##### Core Courses:

These are the courses which are to be compulsorily studied by a student as a core requirement to complete the requirement of a programme in a said branches of study.

##### Elective Courses:

Elective course is a course which can be chosen from a pool of papers. It may be:

- ✓ supportive to the discipline of study
- ✓ providing an expanded scope
- ✓ enabling an exposure to some other branch/domain
- ✓ nurturing student's proficiency/skill.

An elective may be "Generic Elective" focusing on those courses which add generic proficiency to the students. An elective may be "branch centric" or may be chosen from an unrelated branch. It may be called an "Open Elective."

##### Audit Courses:

Courses outside the prescribed range of Credits for students interested to supplement their knowledge/skills. Optional for students to appear / pass in Continuous Internal Evaluation (CIE) in the Semester and Semester End Examination (SEE) of these courses and/or seek their inclusion in the Grade cards or Transcripts issued (but, not for earning Credits).

##### MOOCS and e-Learning:

Department centric elective course through MOOCS (Massive Open Online Course) platform. Students of VI and/or VII semesters can register for the course offered by authorized Institutions/Agencies through online with the approval of the Head of the Department concerned. The certificate issued by the Institutions/Agencies after successful completion of the course will be considered for the award of the Grade to that course.

30-40% of the syllabus of any one course in V-VIII semesters may be taught through e-Learning.

7 **Course Registration:**

Every student has to register for the set of Courses offered by the Department in that Semester including those of Open Elective course of the other Departments and MOOCS with the total number of their Credits being limited by considering the permissible weekly contact hours (typically: 30/Week). Audit courses are over and above these courses/credits.

8. **Credits Required for Award of Degree:**

A student shall become eligible for the award of B.Tech degree, if he/she earns 192 credits by passing in all the basic, core and electives along with practicals prescribed for the B.Tech programme.

- 8.1 It is mandatory for a student to complete successfully all the basic and core courses pertaining to his/her branch of study.
- 8.2 A student shall choose elective courses from the list of elective courses provided for his/her branch of study. Further, he/she may choose elective courses pertaining to other branch esor on MOOCS platform as open electives.
- 8.3 A student may audit a course of his/her interest with the permission of the teacher concerned. However, such credits are not considered as part of the mandatory credits specified in clause 8.

9. **Scheme of Instruction :**

- 9.1 The Joint-Boards of Studies (JBoS) shall formulate the scheme of instruction and examinations, and detailed syllabi for the First and Second Semesters which shall be common for all the branches of study.
- 9.2 The Pass Board of Studies (BoS) of each Department shall formulate the scheme of instruction and examination, and detailed syllabi for the subsequent six semesters of B.Tech Programme taking into account of the credits offered in the first and second semesters in conformity with clause 7.0.
- 9.3 The detailed syllabus of each theory course shall be organized into five units of equal weight.

10. **Structure of Curriculum:**

Curriculum consists of a good mix of Basic, Core and Elective courses. Atypical break down of percentage of Credits is as suggested.

Basic courses : 32-38%

Core courses : 50-60%

Elective courses : 8-10%

Theory courses : 70-80%

Practical courses : 20-30%

Practicals include Laboratory/Drawing/Tutorials/Workshop practice/  
Seminars/Project Work

### 11. Course Numbering Scheme:

Each course number is denoted by five alpha-numerals, three alphabets followed by two numerals.

Code of the department offering the course	CO : Commerce CE : Civil Engineering CH : Chemical Engineering CS : Computer Science and Engineering CY : Chemistry EC: Electronics and Communication Engineering EE : Electrical and Electronics Engineering EO : Economics EN : English MA : Mathematics ME : Mechanical Engineering PH : Physics
Nature of course	T: Theory P: Practical D : Design and Drawing
Course Number	01, 02, ...

### 12. Attendance Requirements:

- 12.1 A student is required to complete the study of B.Tech Programme satisfying the attendance requirements in all the Semesters within a maximum period of eight academic years from the year of admission to become eligible for the award B.Tech degree failing which he/she forfeits his/her seat.
- 12.2 A student shall be detained in a Semester if he/she fails to satisfy the attendance requirements given below:
- i. A student shall attend at least 50 percent of the hours of instruction taken by the teacher, in each course.
  - ii. A student shall attend at least 75 percent of the hours of instruction taken for all the courses put together in that Semester.
- 12.3 The principal shall condone the shortage of attendance of a student provided he/she satisfies the clause 12.2 (i) and obtains at least 65 percent of overall attendance.
- 12.4 A student who fails to satisfy the attendance requirements specified in clauses 12.2 and 12.3 shall repeat that Semester in the subsequent academic years with the written permission of the Principal subject to the clause 12.1.

- 12.5 A student shall not be permitted to study any semester more than three times during the entire Programme of study.
- 12.6 A student who satisfies the attendance requirements specified in either of the clauses 12.2 and 12.3 in any semester may be permitted to repeat that semester canceling the previous attendance and sessional marks of that semester with the written permission of the Principal. However, this facility shall not be extended to any student more than twice during the entire Programme of study as specified in clause 12.1.
- 12.7 Gap year(s) shall be over and above maximum period of eight academic years.

### 13. Evaluation :

- 13.1 Evaluation shall be done on a continuous basis i.e. through Continuous Internal Evaluation(CIE) in the Semester and Semester End Examination(SEE). For each theory course, there shall be two sessional tests of two hours duration carrying 40 marks each and one End-Semester Examination of 3 hours duration carrying 60 marks. Sessional marks for a maximum of 40 shall be awarded based on the performance of the two sessional tests.
- 13.2 For each practical course except project work, the sessional marks for a maximum of 40 shall be awarded based on the continuous assessment of practical work by the teacher concerned. An End-Semester Examination of 3 hours duration carrying 60 marks shall be conducted by two teachers: one external examiner and one internal examiner appointed by the Principal.  
The Principal shall appoint the external examiner from among the panel of examiners recommended by the Chairman, BoS concerned. He shall appoint the internal examiner nominated by the Head of the Department concerned.
- 13.3 The guide shall assess the progress of UG project work continuously and award marks for a maximum of 40. A committee consisting of one external examiner and two internal examiners from the department shall value the project work and conduct viva-voce for a maximum of 60 marks.  
  
The Principal shall appoint the external examiner from among the panel of examiners recommended by the Chairman, BoS concerned. He shall appoint the internal examiner nominated by the Head of the Department concerned.
- 13.4 Sessional Test I shall be conducted in the middle of the semester i.e. after the completion of 50 % of instruction days covering 50% of the syllabus.

- 13.5 Sessional Test II shall be conducted immediately after the completion of instruction days covering the remaining 50 % of the syllabus.
  - 13.6 An End-semester examination in each theory course shall be conducted after the last working day of the semester covering the entire syllabus prescribed for that course.
  - 13.7 It is mandatory for a student to attend both the sessional tests in each theory course. The weighted average of the marks secured in two tests is awarded as sessional marks. However, 0.8 shall be assigned as weight for the best performance of the two tests whereas for the other test it shall be 0.2. If a student is absent for any of the internal tests for whatsoever reason, the marks for that test shall be zero.
  - 13.8 The students shall be permitted to verify the valuation of answer scripts of sessional tests.
  - 13.9 The valuation and verification of answer scripts of Sessional Tests shall be completed within a fifteen days after the conduct of the Sessional Tests.
  - 13.10 The valuation of End-Semester Examination answer scripts shall be arranged by the Controller of Examinations as per the University procedures in vogue.
14. **Question Paper Setting:**
- 14.1 Model Question Paper for each theory course shall be prepared by the teacher within 30 days from the commencement of the Semester and the same shall be forwarded to the Controller of Examinations through the Chairman, BOS concerned. A total of eight questions for a maximum of 12 marks each shall be set covering all the units of the syllabus out of which the student has to answer Question Number one which is compulsory and any four questions from the remaining seven questions i.e. a total of five questions. Question Number one is a compulsory question and comprises of sub-questions covering all the Units. Remaining seven questions have to be set from the entire syllabus with at least one question from each unit. Further, a question may comprise sub-questions specifying the distribution of marks among them. However, the Chairman, BOS shall accord exception in question paper format, if necessary. The question papers shall assess the understanding of the concepts and their applications in solving problems and at least 50% of the questions shall be numerical. Further, the question papers of design-oriented courses shall assess the abilities of analyzing and evaluating design alternatives.
  - 14.2 For each theory course, the question paper shall be set by an external paper setter. The Chairman, BOS shall recommend a panel comprising at least six external paper setters for each theory course to the University. The University shall arrange for setting the question paper by appointing one external paper setter from that panel.

### 15. Grading and Grade Points:

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

**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.

**Semester Grade Point Average (SGPA):** It is a measure of student's performance in a semester.

**Cumulative Grade Point Average (CGPA):** It is a measure of overall performance of a student over all semesters.

#### Letter Grades and Grade Points:

A 10-point grading system with the following letter grades are to be followed.

**Grades and Grade Points**

Letter Grade	Grade Point
O (Outstanding)	10
A+(Excellent)	9
A(Very Good)	8
B+(Good)	7
B(Above Average)	6
C(Average)	5
P (Pass)	4
F(Fail)	0
Ab (Absent)	0

A student obtaining Grade F shall be considered failed and will be required to reappear in the examination.

For non-credit courses 'Satisfactory' or "Unsatisfactory" shall be indicated instead of the letter grade and this will not be counted for the computation of SGPA/CGPA.

#### Computation of SGPA and CGPA

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 taken by a student, i.e in a semester.

$$\text{SGPA } (S_i) = \frac{\sum_{i=1}^N (C_i \times G_i)}{\sum_{i=1}^N C_i}$$

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 and

$N$  is the number of courses in the semester

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

$$\text{CGPA} = \frac{\sum_{i=1}^M (C_i \times S_i)}{\sum_{i=1}^M C_i}$$

where  $S_i$  is the SGPA of the  $i$ th semester and

$C_i$  is the total number of credits in that semester and

$M$  is the number of semesters

SGPA and CGPA shall be rounded off to two decimal points and reported in the transcripts.

15.1 To pass a course in B.Tech Programme, a student has to secure a minimum Grade of P in End-Semester Examination. A student obtaining Grade F shall be considered failed and will be required to reappear in the examination. A student cannot reappear for the End-Semester Examination in a course in which he/she has passed to improve the score.

15.2 A student who has failed in a course can reappear for the End-Semester Examination as and when it is conducted in the normal course. The Sessional Marks obtained by the student will be carried over for declaring the results.

15.3 Whenever the syllabus is revised for a course, the End-semester Examination shall be conducted in old syllabus three times. Thereafter, the students who failed in that course shall take the End-semester Examination in the revised syllabus.

#### 16. **Ranking and Award of Prizes / Medals :**

16.1 Ranks shall be awarded in each branch of study on the basis of Cumulative Grade Point Average (CGPA) for top ten percent of the students or top three students whichever is higher.

16.2 The students who have become eligible for the award of B.Tech degree by passing regularly all the eight Semesters shall only be considered for the award of ranks.

16.3 Award of prizes, scholarships and other honours shall be according to the rank secured by the student as said above and in conformity with the desire of the Donor.

#### 17. **Conditions of Promotion:**

A student shall be eligible for promotion to the next semester of B.Tech Programme provided he/she satisfies the attendance requirements in the immediately preceding semester as specified in clause 12.

#### 18 **Gap Year:**

The concept of Student Entrepreneur in Residence i.e. Gap Year shall be introduced and outstanding students who wish to pursue entrepreneurship are allowed to take a break of one year at any time after completing II year of study to



pursue full time entrepreneurship. A committee shall be constituted to evaluate the proposal submitted by the student and the committee shall decide on permitting the student to have the Gap Year. Students shall be permitted to rejoin the succeeding year from the date of commencement of class work and will be under the academic regulations in force at that time. Gap year may be extended by another year (i.e. a total of two years) and will not be counted for the maximum period of eight academic years.

**19. Grievance Redressal Committee:**

The Principal shall constitute a Grievance Redressal Committee of three Professors from the faculty of the college for a period of two years. The senior most among them shall be convener of the committee who receives the grievances from the students regarding the valuation of sessional tests and places the same before the committee for its consideration. The committee shall submit its redressal recommendations to the Principal for his consideration.

**20. Transitory Regulations:**

20.1 A student who has been detained in any semester of previous regulations for not satisfying the attendance requirements shall be permitted to join in the corresponding semester of this regulation provided the clauses 12.1 and 12.5 hold good.

20.2 End-semester Examinations in each course under the regulations that precede immediately these regulations shall be conducted three times after the conduct of last regular examination under those regulations. Thereafter, the failed students, if any, shall take examination in the equivalent papers of these regulations as suggested by the Chairman, BoS concerned.

**21. Amendment to Regulations:**

Sri Venkateswara University reserves the right to amend these regulations at any time in future without any notice. Further, the interpretation of any of the clauses of these regulations entirely rests with the University.