

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

**M.Tech Degree Program (CBCS) Regulations-2018
(With effect from the batch admitted in the academic year 2018 -2019)**

CHOICE-BASED CREDIT SYSTEM

1. Preamble

M.Tech Degree Program is of two academic years with each academic year being divided into two consecutive 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/dissertation 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

Minimum qualification for seeking admission into a specialization of M.Tech Degree Programme is B.Tech Degree, with at least 50% marks in aggregate, awarded by Sri Venkateswara University (SVU) in appropriate Branch of Engineering or any other Degree recognized by SVU as equivalent thereto including AMIE, AMIICHE and AMIETE.

3. Specializations of Study

The specializations of study in M.Tech Degree Programme are

1. Department of Chemical Engineering
 - a. Chemical Engineering
2. Department of Civil Engineering
 - a. Environmental Engineering
 - b. Geotechnical Engineering
 - c. Hydraulics and Water Resources Engineering
 - d. Structural Engineering
3. Department of Electrical and Electronics Engineering
 - a. Power Systems
4. Department of Electronics and Communication Engineering
 - a. Communication Systems
 - b. Signal Processing
5. Department of Mechanical Engineering
 - a. Industrial Engineering
 - b. Production Engineering
6. Department of Computer Science and Engineering
 - a. Computer Science and Engineering

4. Programme Duration

- 4.1 Minimum duration of the M.Tech Program is two academic years i.e. four semesters and maximum period is four academic years.
- 4.2 Each semester shall consist of 18 weeks with a typical academic work of 30 hours/week equivalent to 90 instruction days. However, the number of instruction days may be reduced to 72, when necessary, with increased number of instruction hours per course per week.
- 4.3 A candidate admitted as a full-time student and completed the course work and obtained a job may be permitted to pursue dissertation work (Phase II) on part-time basis with prior approval from the Principal. The duration of dissertation work (Phase II) under part-time mode shall be two semesters.

5. Credit Definition

Credit defines the quantum of contents/syllabus prescribed for a course and determines the number of instruction hours per week. The norms for assigning credits to a course for a duration of one semester shall be as follows:

- i One credit for every one hour of lecture/tutorial per week
- ii One credit for every two hours of practical work/ /seminar per week
- iii 26 credits for dissertation work.

6. Classification of Courses

The courses of each specialization of study are classified into Core, Elective and Audit Courses. It is mandatory for a student to complete successfully all the courses pertaining to his/her of specialization of study.

6.1 Core Courses

These are compulsorily courses to be studied by a student in a said specialization of study.

6.2 Elective Courses

Elective course is a course which is supportive to the specialization of study. It shall

- ✓ provide an expanded scope
- ✓ enable exposure to some other specialization/domain
- ✓ nurture student's proficiency/skill

A student has to choose one open elective in the third semester.

6.3 Audit Courses

Courses outside the prescribed range of Credits for students interested to supplement their knowledge/skills. A student shall audit one course each in the first and second semesters from the courses offered by the department. However, such credits shall not be considered for including in the mandatory credits specified in clause 8.

6.4 MOOCs and e-Learning

Massive Open Online Courses (MOOCs) and e-learning platforms can be utilized for learning the courses with the permission of the Head of the Department concerned.

7 Course Registration

Every student has to register for the Courses offered by the Department in the beginning of every semester with the total number of credits being limited by considering the permissible weekly contact hours (30/Week). Audit courses are over and above these courses/credits.

8 Credits Required for the Award of Degree

A student shall become eligible for the award of M.Tech degree, if he/she earns **68** credits prescribed for the program by passing all the core and elective courses along with practicals, mini-project and dissertation work.

- 8.1 It is mandatory for a student to complete successfully all the core courses pertaining to his/her specialization of study.
- 8.2 A student may choose program electives including an open elective from the list of courses offered by the department.
- 8.3 A student may audit a course of his/her interest from the list of audit courses offered by the department concerned. However, such credits are not considered as part of the mandatory credits specified in clause 8.

9. Scheme of Instruction

The Board of Studies (BoS) of the specialization concerned shall formulate the scheme of instruction and detailed syllabi of all the courses. For every course, course educational objectives and course outcomes shall be defined. While formulating the scheme of instruction, the BoS shall facilitate to offer the prescribed number of credits for the entire program. The syllabi of theory courses shall be organized into five units of equal weightage.

10. Course Numbering Scheme

Each course is denoted by an alphanumeric code of six characters as detailed below:

First two	Alphabetic characters	Specialization	CH : Chemical Engineering EE : Environmental Engineering GT: Geotechnical Engineering HW: Hydraulics and Water Resources Engineering SE: Structural Engineering PS: Power Systems CS: Communication Systems SP: Signal Processing IE: Industrial Engineering PE: Production Engineering CO : Computer Science and Engineering PG : Post-Graduate
Next two	Alphabetic characters	Course Type	PC : Program Core PE : Program Elective PA : Program Audit OE : Open Elective CP : Core Practical EP : Elective Practical MP : Mini-Project PD : Program Dissertation MC : Mandatory Course
Next two	Numerals	Serial Number	01, 02, ...

11. Attendance Requirements

- 11.1 A student is required to complete the Program of Study satisfying the attendance requirements in all the semesters within twice the prescribed period of study from the year of admission failing which he/she forfeits his/her admission.
- 11.2 A student shall be detained in a semester if he/she fails to satisfy the attendance requirements as given below:

- i. A student shall attend at least 60 percent of the maximum hours of instruction taken by the teacher for each course.
 - ii. A student shall attend at least 75 percent of the maximum hours of instruction taken for all the courses put together in that semester.
- 11.3 A student who fails to satisfy the attendance requirements specified in clause 11.2 shall repeat that semester in the subsequent academic years with the written permission of the Principal.
- 11.4 A student shall not be permitted to study any semester more than two times during the Program of his/her study.
- 11.5 A student who satisfies the attendance requirements specified in clause 11.2 in any semester and wants to repeat the courses in that semester may be permitted by canceling the previous attendance and sessional marks of that semester with the written permission of the Principal. However, this facility shall be extended to any student for two times during the entire Program of study provided the stipulation in clause 11.1 is satisfied.

12. Evaluation

- 12.1 Evaluation shall be done on a continuous basis i.e. through Continuous Internal Evaluation(CIE) and 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 Semester End Examination of three hours duration carrying 60 marks. Sessional marks for a maximum of 40 shall be awarded based on the performance of the two sessional tests.
- 12.2 First Sessional Test shall be conducted in the middle of the semester i.e. after the completion of 50 % of instruction days covering 50% of the syllabus. Second Sessional Test shall be conducted immediately after the completion of instruction days covering rest of the syllabus.
- 12.3 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. A weightage of 0.8 shall be assigned for the better performance of the two tests and 0.2 for the other test. If a student is absent for any of the internal tests for whatsoever reason, the marks for that test shall be zero.
- 12.4 The students shall be permitted to verify the valuation of answer scripts of sessional tests.
- 12.5 The valuation and verification of answer scripts of Sessional Tests shall be completed within 15 days after the conduct of the Sessional Tests.
- 12.6 The valuation of Semester End Examination answer scripts shall be arranged by the Controller of Examinations as per the University procedure in vogue.

12.7 Evaluation of Practicals

For each practical course, the sessional marks for a maximum of 40 shall be awarded by the teacher concerned based on the continuous assessment of practical work. The Semester End Examination of three hours duration carrying 60 marks shall be conducted by two examiners: i) teacher concerned and ii) teacher nominated by the HoD.

13. Evaluation of Dissertation Work

Normally, the dissertation work shall be carried out at Sri Venkateswara University College of Engineering (SVUCE). However, it can also be carried out in any of the recognized Educational Institutions/National Laboratories/ Research Institutions/ Industrial Organizations/ Service Organizations/ Government Organizations with the prior permission from the guide and Head of the Department concerned.

- 13.1 The dissertation work shall be evaluated for a total of **26** credits as indicated in the Table below.
- 13.2 An open pre-submission seminar shall be given by the student at least four weeks ahead of the completion of the programme and submit the dissertation work. Head of the Department shall constitute a committee comprising of the Chairman, BoS(PG), HoD and Supervisor and convenes its meeting to evaluate the open pre-submission seminar. If the open pre-submission seminar delivered by a student is not satisfactory, another seminar shall be scheduled within two weeks.
- 13.3 A student shall submit his dissertation work duly certified by the guide and HoD, after successfully completing all the requisite credits pertaining to theory, practical and mini-project. As soon as a student submits his/her dissertation, Principal shall appoint the External Examiner from among the panel of examiners recommended by the Chairman, BoS (PG) for evaluating the dissertation work.
- 13.4 Head of the Department in consultation with the Supervisor and External Examiner shall schedule the viva-voce Examination of dissertation work and send the evaluation report to the Controller of Examinations.

The evaluation of the dissertation work and the marks allotted are as under:

Evaluation of	Evaluation Committee	Marks
Dissertation(Phase-I) (Evaluation at the end of III Semester)		
i)Continuous Evaluation	Supervisor	50
ii) Seminar	The committee with Head of the Department as Chairman, Chairman, BoS (PG) and Supervisor as members.	50
Dissertation(Phase-II) (Evaluation at the end of IV Semester)		
i)Continuous evaluation	Supervisor	20
ii)An open pre-submission seminar	The committee with Head of the Department as Chairman, Chairman, BoS (PG) and Supervisor as members.	20
iii)Semester End University Examination(An open seminar followed by a Viva-voce)	The committee comprising of External Examiner, HoD and Supervisor wherein the HOD shall be the chairman of the committee.	60

14. Question Paper Setting

- 14.1 Model Question Paper for each theory course shall be prepared by the teacher concerned within 30 days from the commencement of the Semester and the same shall be forwarded to the Controller of Examinations through the Chairman, BOS(PG) concerned. Two questions shall be set from each unit of the syllabus, out of which one question shall be answered by the student. Each question of the unit carries a maximum of 12 marks. However, the Chairman, BoS(PG) 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(PG) 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 the 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 letter grades are as given below:

Grades and Grade Points

Letter Grade	Range of Marks	Grade Point
O (Outstanding)	91 - 100	10
A+(Excellent)	81 - 90	9
A(Very Good)	71 - 80	8
B+(Good)	61 - 70	7
B(Above Average)	51 - 60	6
P (Pass)	50	5
F(Fail)	<50	-
Ab (Absent)	-	-

Student obtaining Grade F shall be considered failed and shall be required to reappear in the Semester- end examination.

Computation of SGPA and CGPA

SGPA is the ratio of sum of the products of the number of credits with the grade points scored by a student in all the courses and the sum of the number of credits of all the courses in the semester.

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

where C_i is the number of credits of the i^{th} course, G_i is the grade point scored 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 over all the semesters of the program.

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

where S_i is the SGPA of the i^{th} semester, 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 In each semester, every student who satisfies the attendance requirements has to register for the semester-end examination, failing which he/she shall not be promoted to the next semester. Any such student who has not registered for the semester-end examination in a semester shall repeat that semester in the next academic year with the written permission of the Principal.
- 15.2

To pass a course in the program, a student has to secure a minimum of 50% of maximum marks in the semester-end examination and a minimum Grade of P overall (both sessional and semester-end examination marks put together). A student obtaining Grade F shall be considered failed and shall be required to reappear for the semester-end examination. A student shall not be allowed to reappear for the semester-end examination in a course which he/she has already passed the course to improve the score.

- 15.3 A student who has failed in a course shall be allowed to reappear for the semester-end examination as and when it is conducted in the normal course. The Sessional Marks obtained by the student shall be carried over for declaring the results.
- 15.4 The semester-end examination in any course of a particular regulation shall be conducted three times. Thereafter, the students who failed in that course shall take the semester-end examination in the equivalent papers of the subsequent regulations, suggested by the Chairman, BoS concerned.

16. Award of Degree

A student who has earned **68** credits and with a minimum CGPA of 5.0 shall become eligible for the award of degree.

17. Ranking and Award of Prizes / Medals

- 17.1 Ranks shall be awarded in each branch of study on the basis of Cumulative Grade Point Average (CGPA) for the top three students.
- 17.2 The students who have become eligible for the award of M.Tech degree by passing regularly all the courses shall only be considered for the award of ranks.
- 17.3 Award of prizes, scholarships and other honors shall be according to the rank secured by the student as said above and in conformity with the desire of the Donor.

18. Transitory Regulations

- 18.1 A student who has been detained in a particular regulation for not satisfying the attendance requirements shall be permitted to rejoin in the same regulations provided the clauses 11.1 and 11.4 hold good.
- 18.2 Semester End University Examinations under the regulations that precede immediately the revised regulations shall be conducted two times after the conduct of last regular examination under those regulations.

- 18.3 The students who satisfy the attendance requirements under the regulations that precede immediately the revised regulations, but do not pass the courses shall appear for the Semester End University Examination in equivalent courses under the revised regulations as recommended by the BoS(PG) concerned.

20 Grievance Redressal Committee

The Principal shall constitute a Grievance Redressal Committee by nominating three Professors from among the faculty of the college for a period of two years. The convener of the committee, one among the three, shall receive the complaints from the students and place the same before the committee for its consideration. The committee shall submit its recommendations to the Principal for his consideration.

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.