

**SCHOOL OF ENGINEERING AND TECHNOLOGY**  
**SRI PADMAVATI MAHILA VISVAVIDYALAYAM**  
**TIRUPATI – 517 502**  
**B.Tech Degree Programme (CBCS) Regulations-2016**  
*(Came into effect from the batch admitted in academic year )*  
**2016-2017**

**CHOICE-BASED CREDIT SYSTEM (CBCS)**

**1. PREAMBLE**

B.Tech Degree Programme offered by the School of Engineering and Technology has a duration of four academic years with each academic year being divided into two consecutive semesters. The academic year starts usually in June/July of every year with an odd semester followed by an even semester in December/January. Choice-Based Credit System (CBCS) is a flexible system of learning and enables students choose elective courses from a large pool of prescribed elective courses. The electives prescribed may be from the Department offering the Programme or from other Departments. Provision also exists for choosing open electives. For every course, learning objectives and learning outcomes are defined following a systematic procedure. A course 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, every course has certain weight defined in terms of the number of credits. The requirement for awarding a degree is prescribed in terms of number of credits to be completed by the students.

**Major objectives of the University:**

1. Emancipation of women through Education.
2. Acquisition of sound updated academic knowledge.
3. Acquisition of specific professional skills and competence for gainful occupation.
4. Developing awareness of major issues and problems being faced by the society at large and by the women in particular.
5. Developing Self-Confidence and creative interaction with the society

**Admissions**

The allotment of B.Tech seats are made on a state wide basis by Andhra Pradesh State Council of Higher Education through EAMCET, ECET, PGECET. The college admits only those who are allotted seats by state council. There shall be “No” change of Branch B.Tech( CSE, ECE, EEE, MECH) by the college either at the time of admission or later.

**2. MINIMUM QUALIFICATION FOR ADMISSION INTO B.TECH PROGRAMME:**

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 Padmavati Mahila Visvavidyalayam. Students with Diploma Qualification can also be admitted into second year B.Tech in respective branch.

### 3. BRANCHES OF STUDY:

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

- **Computer Science Engineering**
- **Electrical and Electronics Engineering**
- **Electronics and Communication Engineering**
- **Mechanical Engineering.**

**4. SEMESTER** :Generally, 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 per semester. The following definitions are adopted

|                           |   |                               |
|---------------------------|---|-------------------------------|
| <b>Lecture/ Tutorial</b>  | - | <b>1 hour/week = 1 Credit</b> |
| <b>Seminar</b>            | - | <b>2 hours/week= 1 Credit</b> |
| <b>Drawing/Practicals</b> | - | <b>2 hours/week= 1 Credit</b> |

**6.** A Course comprises of one or more credits depending on the quantum of syllabus to be covered in the course. A B.Tech programme comprises of basic courses, core courses and elective courses.

### 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 courses with the total number of their Credits being limited by considering the permissible weekly contact hours (typically: 30/Week).

### 8.CREDITS REQUIRED FOR AWARD OF DEGREE

A student shall become eligible for the award of B.Tech degree, if the student earns a minimum of 194 credits by passing all the basic, core and electives along with practicals prescribed for the B.Tech programme. It is mandatory for a student to complete successfully all the basic and core courses pertaining to his/her branch of study.

**8.1** A student shall choose elective courses from the list of elective courses (prescribed by the department) pertaining to his/her branch of study. Further, she may choose elective courses pertaining to other branches or on MOOCS platform as open electives. For every programme, the list of elective courses may be divided into the following types:

**A)** Electives prescribed by the Department- the electives being offered by the department or on MOOCS platform.

**B)** Courses offered by the Department/other Departments/ MOOCS platform. Every student is required to take certain minimum number of electives prescribed by the department (by 1 as above) and/or electives of his/ her choice (by 2 as above) offered by other departments.

**8.2** 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 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. The detailed syllabus of each theory course shall be organized into five units of equal weight.

## **10. STRUCTURE OF CURRICULUM**

Curriculum should consist of a good mix of Basic, Core and Elective courses. A typical breakdown 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 | CS : Computer Science and Engineering<br>EC: Electronics and Communication Engineering<br>EE : Electrical and Electronics Engineering<br>ME : Mechanical Engineering<br>BS: Basic Sciences and Humanities |
| Nature of course                           | T: Theory<br>P: Practical   |
| 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 period of eight academic years from the year of admission to become eligible for the award B.Tech degree failing which she forfeits his/her seat.

**12.2** A student shall be detained in a Semester if she fails to satisfy the attendance requirements given below :

A student shall attend at least 50 percent of the hours of instruction taken by the teacher, in each course. 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 that she satisfies the clause 12.2 (i) and obtains atleast 60 percent of overall attendance for all the courses put together in that Semester.

**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 cancelling 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. Maternity leave shall be granted only once during the entire course. Such candidates have to put up a minimum of 45% attendance course-wise and a minimum aggregate of 45%.

## 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 30 marks each and one End-Semester Examination of 3 hours duration carrying 70 marks. Sessional marks for a maximum of 30 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 held 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 held in the middle of the semester i.e. after the completion of 50 % of actual instruction days covering 50% of the syllabus.

**13.5** Sessional Test II shall be held immediately after the completion of instruction days covering whole of the syllabus.

**13.6** 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 test for whatsoever reason, the marks for that test shall be zero.

**13.7.** The External university examination shall be conducted by the controller of Examinations. Each external theory paper will have a maximum of 70 marks. A student has to obtain a minimum of 35% i.e. 25 marks out of 70 marks to pass that examination. Also, the student has to obtain a minimum of 40 marks out of 100 (**University examination + Sessional marks** put together ) to pass in that paper

**13.7.1** An End-semester examination in each Practical course shall be conducted after the last working day of the semester covering the entire syllabus prescribed for that course. The External Practical examination shall be conducted by the Controller of Examinations. Each external Practical paper will have a maximum of 60 marks.

**13.7.2.** A student has to obtain a minimum of 35% i.e. 21 marks out of 60 marks to pass that examination. Also, the student has to obtain a minimum of 40 Marks out of 100( **University examination + sessional marks** put together) to pass in that paper.

**13.8.** The students shall be permitted to verify the valuation of answer scripts of Sessional tests only.

**13.9.** The evaluation and verification of answer scripts of Sessional Tests shall be completed within a week 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. The question papers shall assess understanding of the concepts and their applications in solving problems and at least 50% of the questions should 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 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, B, C, D, P** and **F**.

**Semester Grade Point Average (SGPA):** It is a measure of performance of work done in a semester. It is the ratio of total credit points secured by a student in various courses registered in a semester and the total course credits taken during that semester. It shall be expressed up to two decimal places.

**Cumulative Grade Point Average (CGPA):** It is a measure of overall cumulative performance of a student in over all semesters. The CGPA is the ratio of total credit points secured by a student in various courses in all semesters and the cumulative sum of the credits of all courses in all the semesters. It is expressed up to two decimal places.

#### **Letter Grades and Grade Points:**

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

- 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.

| <b>Equivalent % marks</b> | <b>Letter Grade</b> | <b>Grade Point</b> |
|---------------------------|---------------------|--------------------|
| 90-100                    | O (Outstanding)     | 10                 |
| 80-89                     | A (VERY Good )      | 9                  |
| 70-79                     | B (Good)            | 8                  |
| 60-69                     | C(Above Average)    | 7                  |
| 50-59                     | D(Average)          | 6                  |
| 40-49                     | P (Pass)            | 5                  |
| Below 40                  | F(Fail)             | 0                  |
| Absent                    | AB                  | 0                  |

#### **COMPUTATION OF SGPA & CGPA:**

**Average (SGPA) and Cumulative Grade Point Average (CGPA):** 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. Sum of the number of credits of all courses undergone by a student in that semester, i.e.  $SGPA (S_i) = \sum(C_i \times G_i) / \sum C_i$

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.

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.

$$CGPA = \sum(C_i \times S_i) / \sum C_i$$

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

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

**Illustration of Computation of SGPA and CGPA**  
Illustration for SGPA

| <b>COURSE</b>   | <b>CREDIT (Ci)</b> | <b>Grade Letter</b> | <b>Grade Point (Gi)</b> | <b>Credit Point (Ci X Gi) (Credit X Grade)</b> |
|-----------------|--------------------|---------------------|-------------------------|--|
| <b>Course 1</b> | <b>3</b>           | <b>A</b>            | <b>9</b>                | <b>3 X 9 = 27</b>                              |
| <b>Course 2</b> | <b>4</b>           | <b>B</b>            | <b>8</b>                | <b>4 X 8 = 32</b>                              |
| <b>Course 3</b> | <b>3</b>           | <b>B</b>            | <b>8</b>                | <b>3 X 8 = 24</b>                              |
| <b>Course 4</b> | <b>3</b>           | <b>O</b>            | <b>10</b>               | <b>3 X 10 = 30</b>                             |
| <b>Course 5</b> | <b>3</b>           | <b>C</b>            | <b>7</b>                | <b>3 X 7 = 21</b>                              |
| <b>Course 6</b> | <b>4</b>           | <b>C</b>            | <b>7</b>                | <b>4 X 7 = 28</b>                              |
|                 | <b>20</b>          |                     |                         | <b>162</b>                                     |

Illustration for CGPA

| <b>Semester</b> | <b>Credit, Ci</b> | <b>SGPA, Si</b> | <b>(Credit, Ci) x (SGPA, Si)</b> |
|-----------------|-------------------|-----------------|----------------------------------|
| Semester 1      | 24                | 6.94            | 166.56                           |
| Semester 2      | 25                | 7.60            | 190.00                           |
| Semester 3      | 25                | 7.20            | 180.00                           |
| Semester 4      | 26                | 6.85            | 178.10                           |
| Semester 5      | 26                | 7.12            | 185.12                           |
| Semester 6      | 24                | 7.42            | 178.08                           |
| Semester 7      | 22                | 7.36            | 161.92                           |
| Semester 8      | 22                | 7.90            | 173.88                           |
|                 | <b>194</b>        |                 | <b>1413.58</b>                   |

$$CGPA = \frac{\sum(Ci \times Si)}{\sum Ci}$$

$$CGPA = 1413.58/194 = 7.29$$

15.1 To pass 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 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 held in the normal course the Sessional Marks obtained by the student will be carried over for declaring the result



|                                     |  |
|-------------------------------------|--|
| <b>FIRST CLASS WITH DISTINCTION</b> | <b>7.5 and Above</b>                   |
| <b>FIRST CLASS</b>                  | <b>Below 7.5 but not less than 6.5</b> |
| <b>SECOND CLASS</b>                 | <b>Below 6.5 but not less than 5.5</b> |
| <b>PASS CLASS</b>                   | <b>Below 5.5 but not less than 4.0</b> |

## **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 that 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 and at any time of an academic year 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 for having the Gap Year. Students will be permitted to rejoin into 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 the

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 in the clauses 12.1 and 12.5 hold good.

**20.2.** End-semester Examinations in each course under the regulations that precede immediately after 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. REGULATIONS AND AMENDMENT**

Sri Padmavati Mahila Visvavidyalayam reserves the right to amend these regulations at any time in future without any notice. Further, the interpretation of any of the clause of these regulations entirely rests with university.