

**PRASAD V POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY**  
(Autonomous)



**ACADEMIC RULES & REGULATIONS (PVP20)**

Applicable for the batch of students admitted from the Academic Year 2020-2021

**PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY**  
(Autonomous)

AICTE approved, NBA & NAAC A<sup>+</sup> Accredited, An ISO 9001:2015 certified Institution  
Permanently Affiliated to Jawaharlal Nehru Technological University

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**w.e.f. A.Y 2020 – 2021**

## PREFACE

PVP Siddhartha Institute of technology, established in 1998, is one of the seventeen educational institutions sponsored and run by Siddhartha Academy of General & Technical Education. The 250 members of the Academy are a group of industrialists, educationists, auditors and philanthropists with vast experience in their respective fields and above all with an ardent desire to spread quality Education. All the academic organizations of Siddhartha Academy stand symbolic of the pragmatic vision of its founders. PVP Siddhartha Institute of Technology has the advantage of inheriting the higher academic standards. The college is approved by AICTE and is permanently affiliated to JNTUK. It is certified by ISO 9001-2015 for its quality standard. All the UG Programs are accredited by the National Board of Accreditation and NAAC with A<sup>+</sup> grade. It is an Autonomous institute.

The curriculum is revised continuously to address the challenges of industry and academia and to foster the global competencies among the students. The curriculum is revised thrice since 2012. The present curriculum(PVP20) is designed incorporating the features such as outcome based approach, encouraging self-learning through MOOCs platforms i.e., Swayam, COURSERA, EDX, NPTEL, etc., Transformation of creative ideas into a prototype through Internship & Project, enhancing depth & breadth by introducing more number of programs, open electives in core and multi-disciplinary areas, offering courses by industry experts to improve Industry Institute Interaction in addition to internships at industry and introduction of wide range of value added courses beyond curriculum to choose according to their interest to enhance their employability skills.

### **Institute Vision**

To provide rich ambience for Academic and Professional Excellence, Research, Employability skills, Entrepreneurship and Social responsibility.

### **Institute Mission**

To empower the students with Technical knowledge, Awareness of up-to-date technical trends, Inclination for research in the areas of human needs, Capacity building for Employment / Entrepreneurship, Application of technology for societal needs.

### **Quality Policy**

At PVPSIT, We commit ourselves to offer Quality professional education in engineering & Management by adhering to applicable statutory and regulatory requirements and through continuous improvement in the Quality of our services by,

- Regular up gradation of knowledge and skills of faculty
- Improving the teaching methods and strategies
- Providing state of art infrastructure
- Recruiting competent faculty and maintaining prescribed Teacher Student ratio
- Improving the employability of students
- Enhanced Collaboration with industry and institutions of National Repute

**Prasad V. Potluri Siddhartha Institute of Technology, Kanuru,  
Vijayawada-07  
Department of Computer Science and Engineering**

**Vision:**

To be a Centre of excellence in academics and research in Computer Science and Engineering and take up challenges for the benefit of society.

**Mission:**

- Impart professional education through best curriculum in harmony with the industry needs.
- Inculcate ethics, research capabilities and team work in the young minds so as to put efforts to the advancement of the nation.
- Strive for student achievement and success with leadership qualities and preparing them for continuous learning in the global environment.

**PEO's:**

- PEO-I: The graduates of the program will excel in the concepts of basic engineering and advanced concepts of computer science engineering.
- PEO-II: The graduates of the program will be professional in computing industry or pursuing higher studies.
- PEO-III: The graduates of the program will excel in team work, ethics, and communication skills and contribute to the benefit to the society.

**Program Outcomes (PO's):**

PO-1: **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO-2: **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO-3: **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO-4: **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO-5: **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO-6: **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO-7: **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO-8: **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO-9: **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO-10: **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO-11: **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO-12: **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

#### **Program Specific Outcomes (PSO's):**

- PSO-I: Apply the Knowledge of Computing Skills in building the Software Systems that meet the requirements of Industry and Society.
- PSO-II: Apply the Knowledge of Data Engineering and Communication Technologies for Developing Applications in the Domain of Smart and Intelligent Computing.

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# Engineering UG Programmes

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## Introduction

The redesigned curriculum focused on up skilling the graduates on the skills relevant to the need and demands of the industry. The curriculum mandates students to take up five skill courses which are relevant to the industry from second year onwards, two basic level skill courses, one on soft skills and other two on advanced level skill courses. The students are also given the option of choosing between skill courses offered by the Institute and a certificate course offered by industry, a professional body, APSSDC or any other accredited body.

Another major change brought in the curriculum is the introduction of B.Tech. with Honors or a B.Tech with a Minor. This is to give an opportunity for the fast learners to earn additional credits either in the same domain or in a related domain, making them more proficient in their chosen field of discipline or be a graduate with multidisciplinary knowledge and job ready skills.

Mandatory Internship, both industry and social, is included in the revised curriculum that aims at making engineering graduates connect with the needs of the industry and society at large. It will be mandatory for the students to intern in the industry/field for four to six weeks during the summer vacation and also in the final semester to acquire the skills required for job.

The redesigned curriculum offers academic flexibility by introducing a pool of interdisciplinary and job-oriented skill courses which are integrated in to the curriculum of each branch of engineering, from which a student can pick his choice. Flexibility is not only given to students in the choices of courses, but flexibility is given in choosing courses either from the pool of courses offered by the concerned department or in choosing the courses offered by APSSDC or by any other reputed organization/professional body which offers with certification, as decided by respective BoS. Hence, the students are given wide choice and flexibility to undertake courses, while at the same time offering relevance to the interest of individual student in their own context. The curriculum also gives flexibility to the institution in offering a variety of courses to the students of a particular discipline. The Board of Studies is empowered to identify as many tracks and pools as possible in emerging technologies and industrial relevance, and also in humanities and sciences.



## 1. SHORT TITLE AND COMMENCEMENT

- a. The regulations listed under this head are common for all degree level undergraduate programmes (B.Tech.), offered by the college with effect from the academic year 2020-21 and they are called as “PVP20” regulations.
- b. The regulations here under are subjected to amendments as may be made by the Academic Council of the college from time to time, keeping in view of the recommendations of the Board of Studies. Any or all such amendments will be effective from such date and to such batches of candidates including those already undergoing the programme, as may be decided by the Academic Council.

## 2. DEFINITIONS

- a. “**Commission**” means University Grants Commission(UGC);
- b. “**Council**” means All India Council for Technical Education(AICTE);
- c. “**University**” means Jawaharlal Nehru Technological University Kakinada(JNTUK);
- d. “**College**” means Prasad V Potluri Siddhartha Institute of Technology, Vijayawada;
- e. An **Academic Programme** means any combination of courses and/or requirements leading to award of a degree.
- f. “**Course**” means a subject either theory or practical identified by its course title and code number and which is normally studied in a semester.
- g. “**Degree**” means an academic degree conferred by the university upon those who complete the under graduate curriculum.
- h. “**MOOC**” means Massive Open Online Course
- i. “**Regular Students**” means students enrolled into the four year programme in the first year.
- j. “**Lateral Entry Students**” means students enrolled into the four year programme in the second year.

## 3. ACADEMIC PROGRAMMES

### 3.1 Nomenclature of Programmes

- 3.1.1 The nomenclature and its abbreviation given below, shall continue to be used for the Degree programmes under the University, as required by the Council and the Commission:

#### **Bachelor of Technology (B. Tech)**

Besides, the name of specialization shall be indicated in brackets after the abbreviation, for example, engineering degree in Mechanical Engineering programme is abbreviated as B.Tech (Mechanical Engineering).

3.1.2 Bachelor of Technology (B. Tech.) degree programme is offered in:

1. Civil Engineering(CE)
2. Computer Science and Engineering(CSE)
3. Electronics and Communication Engineering(ECE)
4. Electrical and Electronics Engineering(EEE)
5. Information Technology(IT)
6. Mechanical Engineering(ME)

#### **4. DURATION OF THE PROGRAMMES**

##### **4.1 Normal Duration**

- 4.1.1. The duration of an academic programme shall be four years consisting of eight semesters.
- 4.1.2. The duration of the programme for lateral entry students who are admitted in II year shall be three years that consists of six semesters.

##### **4.2 Maximum Duration**

- 4.2.1 The maximum period for which a student can take to complete a full time academic programme shall be double the normal duration of the programme, i.e., for regular students eight years, for lateral entry students six years.

##### **4.3 Minimum Duration of a Semester**

Each semester consists of a minimum of 90 instruction days with about minimum 20 and maximum 33 contact hours per week.

#### **5. ADMISSION CRITERIA**

The eligibility criteria for admission into UG Engineering programmes are as per the norms approved by Government of Andhra Pradesh from time to time. The sanctioned seats in each programme in the college are classified into CATEGORY-A, and CATEGORY-B at I year level and only CATEGORY-A at Lateral Entry II year level.

The percentages of Category-A, Category-B and Lateral Entry Seats are decided from time to time by the Government of Andhra Pradesh.

##### **5.1 CATEGORY – A Seats**

Category - A seats are filled as per the norms approved by the Government of Andhra Pradesh.

##### **5.2 CATEGORY – B Seats**

Category - B seats are filled by the College as per the norms approved by the Government of Andhra Pradesh.

##### **5.3 CATEGORY - Lateral Entry Seats**

Lateral entry candidates shall be admitted into the III semester directly as per the norms approved by Government of Andhra Pradesh.

## 6. CREDIT SYSTEM AND GRADE POINTS

### 6.1 Credit Definition

'Credit' means quantified and recognized learning. Credit is measured in terms of contact hours per week in a semester. Typically one credit is given to:

- (a) Theory/Tutorial course conducted for one contact period.
- (b) Laboratory course conducted for two contact periods.

Each course is assigned a certain number of credits depending upon the number of contact hours (Lectures/Tutorials/Practical) per week.

The curriculum of the eight semesters B.Tech program is designed to have a total of 160 credits for the award of B.Tech degree.

For lateral entry students, the curriculum of six semesters B.Tech program is designed to have a total of 121 credits for the award of B.Tech degree.

### 6.2 Semester Course Load

The average course load shall be fixed at 20 credits per semester with its minimum and maximum limits being set at 12 and 23 credits.

### 6.3 Grade Points and Letter Grade for a Course

The grade points and letter grade will be awarded to each course based on student's performance as per the grading system shown in the Table.

**Table : Grading System for B. Tech Programme(PVP20 Regulations)**

**Grades and Grade Points (PVP20 Regulations)**

Theory / Drawing (Max-100)	Laboratory/ Mini Project/ Internship etc. (Max – 50)	Level	Grade Point	Letter Grade
$\geq 90$	$\geq 45$	Outstanding	10	A+
$\geq 80$ to $\leq 89$	$\geq 40$ to $\leq 44$	Excellent	9	A
$\geq 70$ to $\leq 79$	$\geq 35$ to $\leq 39$	Very Good	8	B
$\geq 60$ to $\leq 69$	$\geq 30$ to $\leq 34$	Good	7	C
$\geq 50$ to $\leq 59$	$\geq 25$ to $\leq 29$	Fair	6	D
$\geq 40$ to $\leq 49$	$\geq 20$ to $\leq 24$	Satisfactory	5	E
$< 40$	$< 20$	Fail	0	F (FAIL)
ABSENT	ABSENT	ABSENT	0	AB

\* For Major Project same (%) percentages will be followed for grading

#### 6.4 Semester Grade Points Average(SGPA)

The performance of each student at the end of each semester is indicated in terms of SGPA calculated as shown in equation (1)

$$SGPA = \frac{\sum (CR \times GP)}{\sum CR \text{ (for all courses offered in the semester)}} \quad \text{-- (1)}$$

Where CR= Credits of a course

GP = Grade points awarded for a course

$\sum CR$  = Summation of all the courses offered in the semester

#### 6.5 Cumulative Grade Point Average (CGPA)

The Cumulative Performance of each student at the end of each semester is indicated in terms of CGPA which is calculated as shown in equation (2).

$$CGPA = \frac{\sum CR \times GP}{\sum CR \text{ (for all courses offered upto that semester /entire program)}} \quad \text{-- (2)}$$

Where CR = Credits of a course

GP = Grade points awarded for a course

Percentage equivalent of CGPA =  $(CGPA - 0.75) * 10$

### 7.CURRICULUM FRAMEWORK

#### 7.1. Regular and Honors B.Tech Programmes of all Branches

1. Award of the Degree: A student will be declared eligible for the award of

B. Tech. degree if he/she fulfills the following:

- i. Pursues a course of study in not less than four and not more than eight academic years.
- ii. After eight academic years from the year of their admission, he/she shall forfeit their seat in B. Tech course and their admission stands cancelled.
- iii. Registers for 160 credits and must secure all the 160 credits.
- iv. A student shall be eligible for the award of B.Tech degree with Honors or Minor if he / she earns 20 credits in addition to the 160 credits. A student shall be permitted to register either for Honors or for Minor and not for both simultaneously.

## 2. Structure of the Undergraduate Engineering program:

**Every course of B.Tech. Program shall be placed in one of the nine categories as listed in table below:**

S. No	Category	Code	Suggested breakup of Credits (APSCHE)	Suggested breakup of Credits (AICTE)
1	Humanities and social science including Management courses	HSMC	10.5	12
2	Basic Science courses	BSC	21	25
3	Engineering Science courses	ESC	24	24
4	Professional core Courses	PCC	51	48
5	Open Elective Courses	OEC	12	18
6	Professional Courses Elective	PEC	15	18
7	Internship, project work seminar,	PROJ	16.5	15
8	Mandatory courses	MC	Non-credit	Non-credit
9	Skill Oriented Courses	SC	10	-
<b>Total Credits</b>			160	160

## 3. Assigning of Credits:

1 Hr. Lecture (L) per week - 1 credit

1 Hr. Tutorial (T) per week - 1 credit

1 Hr. Practical (P) per week - 0.5 credits

2 Hours Practical (Lab)/week - 1 credit

- There shall be mandatory student induction program for fresher's, with a three-week duration before the commencement of first semester. Physical activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to local Areas, Familiarization to Dept./Branch & Innovations etc., shall be included in the guidelines issued by AICTE
- All undergraduate students shall register for NCC/NSS activities. A student will be required to participate in an activity for two hours in a week during second and third semesters. Grade shall be awarded as Completed or Not Completed in the mark sheet on the basis of participation, attendance, performance and behavior, and it is treated as student practice course . If a student gets an unsatisfactory Grade, he/she shall repeat the above activity in the subsequent years, in order to complete the degree requirements.
- Courses like Environmental Sciences, Universal Human Values, Ethics, Indian Constitution, Essence of Indian Traditional Knowledge etc., shall be included in the curriculum as non-credit mandatory courses. Environmental Sciences is to be

offered compulsorily as mandatory course for all branches. A student has to secure 40% of the marks allotted in the internal evaluation for passing the course. No marks or letter grade shall be allotted for all mandatory non-credit courses.

7. Institution may swap some of the courses between first and second semesters to balance the workload.
8. The concerned Board of studies can assign tutorial hours to such courses wherever it is necessary, but without change in the total number of credits already assigned for semester.
9. There shall be 05 Professional Elective courses and 04 Open Elective courses. All the Professional & Open Elective courses shall be offered for 03 credits, wherever lab component is involved it shall be (2-0-2) and without lab component it shall be (3-0-0). If a course comes with a lab component, that component has to be cleared separately. The concerned BOS shall explore the possibility of introducing virtual labs for such courses with lab component.
10. All Open Electives are offered to students of all branches in general. However, a student shall choose an Open Elective from the list in such a manner that he/she has not studied the same course in any form during the Programme.
11. A student shall be permitted to pursue up to a maximum of two elective courses under MOOCs during the Programme. Each of the courses must be of minimum 12 weeks in duration. Attendance will not be monitored for MOOC courses. Student has to pursue and acquire a certificate for a MOOC course only from the organizations/agencies approved by the BoS in order to earn the 3 credits. The Head of the department shall notify the list of such courses at the beginning of the semester.
12. The college shall invite registration forms from the students at the beginning of the semester for offering professional and open elective courses. There shall be a limit on the minimum and maximum number of registrations based on class/section strength.
13. Students shall undergo mandatory summer internships for a minimum of four to six weeks duration at the end of second and third year of the Programme. There shall also be mandatory full internship in the final semester of the Programme along with the project work.
14. There shall be 05 skill-oriented courses offered during III to VII semesters. Among the five skill courses, four courses shall focus on the basic and advanced skills related to the domain courses and the remaining one shall be a soft skills course.
15. Under graduate Degree with Honors / Minor shall be issued by the institute to the students who fulfil all the academic eligibility requirements for the B. Tech program and Honors/Minor program. The objective is to provide additional learning opportunities to academically motivated students.
16. Assessment: The performance of a student in each semester shall be evaluated subject wise with a maximum of 100 marks for theory and 50 marks for practical subject. The distribution shall be 30 marks for Internal Evaluation and 70 marks for the End Semester Theory Examinations. 15 marks for Internal Evaluation and 35 marks for the End Semester practical Examinations. A student has to secure not less than 35% of marks in the end semester examination and minimum 40% of marks in the sum total of internal and end semester examination marks to earn the credits allotted to each course.

Detailed guidelines for continuous evaluation shall be planned by concerned combined BOS of the Universities.

### **17. Attendance Requirements:**

- i. A student shall be eligible to appear for end semester examinations if he/she acquires a minimum of 75% of attendance in aggregate of all the subjects in a semester.
- ii. Shortage of Attendance below 65% in aggregate shall in NO case be condoned.
- iii. Condonation for shortage of attendance in aggregate up to 10% (65% and above and below 75%) in each semester may be granted by the College Academic Committee.
- iv. Students whose shortage of attendance is not condoned in any semester are not eligible to take their end semester examination of that class and their registration shall stand cancelled.
- v. A student will not be promoted to the next semester unless he satisfies the attendance requirements of the present semester, as applicable. They may seek readmission for that semester when offered next.
- vi. A stipulated fee shall be payable towards condonation of shortage of attendance to the college. A student is eligible to write the semester end examinations if he acquires 75% of attendance in aggregate of all the subjects.

## **7.2 General Issues**

- 7.2.1 Curriculum framework is important in setting the right direction for a degree programme as it takes into account the type and quantum of knowledge necessary to be acquired by a student in order to qualify for the award of degree in his/her chosen branch or specialization.
- 7.2.2 Besides, this also helps in assigning the credits for each course, sequencing the courses semester-wise and finally arriving at the total number of courses to be studied and the total number of credits to be earned by a student in fulfilling the requirements for conferment of degree.
- 7.2.3 Each theory course shall consist of five units.

## **7.3 Curriculum Structure**

The curriculum is designed to facilitate B. Tech (Honors) and B.Tech (Major, Minor) incorporates courses required to attain the expected knowledge, skills and attitude by the time of graduation as per the needs of the stakeholders. The curriculum structure consists of various course categories (as described in 7.3.1 to 7.3.5) to cover the depth and breadth required for the programme and for the attainment of programme outcomes of the corresponding programme.

### **7.3.1 Institutional Core**

Institutional Core consists of the courses required for all UG Engineering Programmes offered in this college. The courses offered under this category cover the required knowledge in the following areas:

**a) Basic Sciences:**

Basic Science courses include Engineering Physics, Applied Physics, Engineering Physics Lab, Applied Physics Lab Engineering Chemistry, Engineering Chemistry Lab, and Engineering Mathematics, etc.

**b) Engineering Sciences:**

Engineering Science courses include Problem Solving and Programming, AI Tools, Internet of Things, Design Thinking, Basic Electrical and Electronics Engineering, Engineering Graphics, Problem Solving & Programming Lab, Basic Electrical & Electronics Engineering Lab, AI Tools Lab, Internet of Things Lab, Design Thinking Lab and Basic Workshop, etc.

**c) Humanities and Social Sciences:**

Humanities and Social Science Courses consist of Communicative English I, Communicative English II, HS Elective, Communicative English-I Lab and Communicative English-II Lab, etc.

**7.3.2 Elective Courses**

Elective courses are offered across the programmes to enhance the knowledge breadth and professional competency of the students.

Courses	Branch Specific	Compulsory
Elective courses	Professional Electives	Supportive to the discipline courses with expanded scope in a chosen track of specialization or cross track courses
	HS Management Elective	Nurture the student interests in management courses.
	Open Electives	Common to all disciplines that helps general interest of a student

**7.3.3 Professional Core**

The Professional core consists of set of courses considered which are necessary for the students of the specific programme. The courses under this category satisfy the Programme Specific Criteria prescribed by the appropriate professional societies.

**7.3.4 Project**

In the final semester, the student should mandatorily undergo internship and in parallel he/she should work on a project with well-defined objectives.

**7.3.5 Mandatory Learning Courses**

According to the guidelines given by statutory bodies, Courses on Environmental Science, Constitution of India and Engineering Ethics, Life Sciences for Engineers and Life Sciences for Engineers Lab shall be offered. Induction program shall be offered in I semester for all the branches.

**7.3.6 Honors Programme**

In order to obtain honors degree students shall earn additional 20 credits in addition to the 160 credits for obtaining the UG degree. Students can register for additional courses by satisfying the pre-requisite course(s) to a maximum of 8 credits in each of the semesters from IV semester onwards along with the regular semester courses as prescribed. There is no minimum limit to the credits for taking additional courses.



1. Students of a Department/Discipline are eligible to opt for Honors Programme offered by the same Department/Discipline.
2. A student shall be permitted to register for Honors program at the beginning of 4th semester provided that the student must have acquired a minimum of 8.0 CGPA up to the end of 2<sup>nd</sup> semester without any backlogs. In case of the declaration of the 3<sup>rd</sup> semester results after the commencement of the 4th semester and if a student fails to score the required minimum of 8 CGPA, his/her registration for Honors Programme stands cancelled and he/she shall continue with the regular Programme. A CGPA of 8 has to be maintained in the subsequent semesters without any backlog in order to keep the Honors registration active.
3. Students can select the additional and advanced courses from their respective branch in which they are pursuing the degree and get an honors degree in the same. e.g. If a Mechanical Engineering student completes the selected advanced courses from same branch under this scheme, he/she will be awarded B.Tech. (Honors) in Mechanical Engineering.
4. In addition to fulfilling all the requisites of a Regular B.Tech Programme, a student shall earn 20 additional credits to be eligible for the award of B. Tech (Honors) degree. This is in addition to the credits essential for obtaining the Under Graduate Degree in Major Discipline (i.e. 160 credits).
5. Of the 20 additional Credits to be acquired, 16 credits shall be earned by undergoing specified courses listed as pools, with four courses, each carrying 4 credits. The remaining 4 credits must be acquired through two MOOCs, which shall be domain specific, each with 2 credits and with a minimum duration of 8/12weeks as recommended by the Board of studies.
6. It is the responsibility of the student to acquire/complete prerequisite before taking the respective course. The courses offered in each pool shall be domain specific courses and advanced courses.
7. The concerned BOS shall decide on the minimum enrolments for offering Honors program by the department. If minimum enrolments criteria are not met then the students shall be permitted to register for the equivalent MOOC courses as approved by the concerned Head of the department in consultation with BOS.
8. Each pool can have theory as well as laboratory courses. If a course comes with a lab component, that component has to be cleared separately. The concerned BOS shall explore the possibility of introducing virtual labs for such courses with lab component.
9. MOOC courses must be of minimum 8 weeks in duration. Attendance will not be monitored for MOOC courses. Students have to acquire a certificate from the agencies approved by the BOS with grading or marks or pass/fail in order to earn 4 credits. If the MOOC course is a pass/fail course without any grades, the grade to be assigned will be as decided by the Institute/academic council.
10. The concerned BOS shall also consider courses listed under professional electives of the respective B. Tech programs for the requirements of B. Tech (Honors). However, a student shall be permitted to choose only those courses that he/she has not studied in any form during the Programme.
11. If a student drops or is terminated from the Honors program, the additional credits so far earned cannot be converted into free or core electives; they will remain extra. These additional courses will find mention in the transcript (but not in the degree certificate). In such cases, the student may choose between the actual grade or a "pass (P)" grade and also choose to omit the mention of the course as for the following: The courses which were not done under the dropped Honors will not be shown in the

transcript.

12. In case a student fails to meet the CGPA requirement for Degree with Honors at any point after registration, he/she will be dropped from the list of students eligible for Degree with Honors and they will receive regular B.Tech degree only. However, such students will receive a separate grade sheet mentioning the additional courses completed by them.
13. Honors must be completed simultaneously with a major degree program. A student cannot earn Honors after he/she has already earned bachelor's degree.

#### **7.4 Minor Programme:**

In order to obtain Minor degree students shall earn additional 20 credits in addition to the 160 credits for obtaining the UG degree. Students can register for additional courses by satisfying the pre-requisite course(s) to a maximum of 8 credits in each of the semesters from IV semester onwards along with the regular semester courses as prescribed. There is no minimum limit to the credits for taking additional courses.

1. A student shall be permitted to register for Minors program at the beginning of 4<sup>th</sup> semester subject to a maximum of two additional courses per semester, provided that the student must have acquired 8 CGPA (Cumulative Grade point average) up to the end of 2<sup>nd</sup> semester without any history of backlogs. It is expected that the 3<sup>rd</sup> semester results may be announced after the commencement of the 4<sup>th</sup> semester. If a student fails to acquire 8 CGPA up to 3<sup>rd</sup> semester or failed in any of the courses, his registration for Minors program shall stand cancelled. A CGPA of 8 has to be maintained in the subsequent semesters without any backlog in order to keep the Minors registration active.
2. a) Students who are desirous of pursuing their special interest areas other than the chosen discipline of Engineering may opt for additional courses in minor specialization groups offered by a department other than their parent department. For example, If Mechanical Engineering student selects subjects from Civil Engineering under this scheme, he/she will get Major degree of Mechanical Engineering with minor degree of Civil Engineering  
  
b) Student can also opt for Industry relevant tracks of any branch to obtain the Minor Degree, for example, a B.Tech Mechanical student can opt for the industry relevant tracks like Data Mining track, IOT track, Machine learning track etc.
3. The BOS concerned shall identify as many tracks as possible in the areas of emerging technologies and industrial relevance / demand. For example, the minor tracks can be the fundamental courses in CE, EEE, ME, ECE, CSE, AND IT etc., or industry tracks such as Artificial Intelligence (AI), Machine Learning (ML), Data Science (DS), Robotics, Electric vehicles, VLSI etc.
4. The list of disciplines / branches eligible to opt for a particular industry relevant minor specialization shall be clearly mentioned by the respective BOS.
5. There shall be no limit on the number of programs offered under Minor. The Institution can offer minor programs in emerging technologies based on expertise in the respective departments or can explore the possibility of collaborating with the relevant industries/agencies in offering the program.

6. Out of the 20 Credits, 16 credits shall be earned by undergoing specified courses listed by the concerned BOS along with prerequisites. It is the responsibility of the student to acquire / complete prerequisite before taking the respective course. If a course comes with a lab component, that component has to be cleared separately. A student shall be permitted to choose only those courses that he / she has not studied in any form during the Programme.
7. The concerned BOS shall decide on the minimum enrolments for offering Minor program by the department. If a minimum enrolments criterion is not met, then the students may be permitted to register for the equivalent MOOC courses as approved by the concerned Head of the department in consultation with BOS.
8. A student shall earn additional 20 credits in the specified area to be eligible for the award of B. Tech degree with Minor. This is in addition to the credits essential for obtaining the Under Graduate Degree in Major Discipline (i.e. 160credits).
9. In addition to the 16 credits, students must pursue at least 2 courses through MOOCs. The courses must be of minimum 8 weeks in duration. Attendance will not be monitored for MOOC courses. Student has to acquire a certificate from the agencies approved by the BOS with grading or marks or pass/fail in order to earn 4credits.If the MOOC course is a pass/fail course without any grades, the grade to be assigned as decided by the Institute/academic council.
10. Student can opt for the Industry relevant minor specialization as approved by the concerned departmental BOS. Student can opt the courses from Skill Development Corporation (APSSDC) or can opt the courses from an external agency recommended and approved by concerned BOS and should produce course completion certificate. The Board of studies of the concerned discipline of Engineering shall review such courses being offered by eligible external agencies and prepare a fresh list every year incorporating latest skills based on industrial demand.
11. A committee should be formed at the level of College / Universities / department to evaluate the grades / marks given by external agencies to a student which are approved by concerned BOS. Upon completion of courses the departmental committee should convert the obtained grades / marks to the maximum marks assigned to that course. The controller of examinations can take a decision on such conversions and may give appropriate grades.
12. If a student drops (or terminated) from the Minor program, they cannot convert the earned credits into free or core electives; they will remain extra. These additional courses will find mention in the transcript ( but not in the degree certificate). In such cases, the student may choose between the actual grade or a “pass(P)” grade and also choose to omit the mention of the course as for the following: The courses which were not done under the dropped Minors will not be shown in the transcript.
13. In case a student fails to meet the CGPA requirement for B.Tech degree with Minor at any point after registration, he/she will be dropped from the list of students eligible for degree with Minors and they will receive B.Tech degree

only. However, such students will receive a separate grade sheet mentioning the additional courses completed by them.

14. Minor must be completed simultaneously with a major degree program. A student cannot earn the Minor after he / she has already earned bachelor's degree.

### **7.6 Industrial Collaboration (Case Study)**

Institute - Industry linkages refer to the interaction between firms and universities or public research centers with the goal of solving technical problems, working on R&D, innovation projects and gathering scientific as well as technological knowledge. It involves the collaboration of Industries and Institutes in various areas that would foster the research ecosystem in the country and enhance growth of economy, industry and society at large.

The Institution is permitted to design any number of Industry oriented minor tracks as the respective BoS feels necessary. In this process the Institution can plan to have industrial collaborations in designing the minor tracks and to develop the content and certificate programs. Industry giants such as IBM, TCS, WIPRO etc., may be contacted to develop such collaborations. The Universities / Institutions shall also explore the possibilities of collaborations with major Industries in the core sectors and professional bodies to create specialized domain skills.

### **7.7 Mandatory Internships**

1. Two summer internships each with a minimum of four to six weeks duration, done at the end of second and third years, respectively are mandatory. The internship can be done by the students at local industries, Govt. Organizations, construction agencies, Industries, Hydel and thermal power projects and also in software MNCs.
2. A supervisor/mentor/advisor has to be allotted to guide the students for taking up the summer internship. The supervisor shall monitor the attendance of the students while taking up the internship. Attendance requirements are as per the norms of the Institute.
3. Evaluation of the summer internships shall be through the departmental committee. A student will be required to submit a summer internship report to the concerned department and appear for an oral presentation before the departmental committee consisting of an external examiner; Head of the Department; supervisor of the internship and a senior faculty member of the department. The report and the oral presentation shall carry 40% and 60% weightages respectively.
4. It shall be evaluated for 50 external marks at the end of the semester. There shall be no internal marks for Summer Internship.
5. In the final semester, the student should mandatorily undergo internship and in parallel he/she should work on a project with well-defined objectives. At the end of the semester the candidate shall submit an internship completion certificate and a project report. A student shall also be permitted to submit project report on the work carried out during the internship. The project report shall be evaluated with an external examiner.
6. The College shall facilitate and monitor the student internship programs. Completion of internships is mandatory, if any student fails to complete internship, he/she will not

be eligible for the award of degree. In such cases, the student shall repeat and complete the internship.

### **7.8 Skill Oriented Courses**

1. For skill oriented / skill advanced course, one theory and 2 practical hours or two theory hours may be allotted as per the decision of concerned BOS.
2. Out of the five skill courses two shall be skill-oriented courses from the same domain and shall be completed in second year. Of the remaining 3 skill courses, one shall be necessarily be a soft skill course and the remaining 2 shall be skill-advanced courses either from the same domain or Job oriented skill courses, which can be of inter disciplinary nature.
3. A pool of interdisciplinary skill oriented courses shall be designed by a common Board of studies by the participating departments / disciplines and the syllabus along with the pre requisites shall be prepared for each of the laboratory infrastructure requirements. The list of such courses shall be included in the curriculum structure of each branch of Engineering, so as to enable the student to choose from the list.
4. The student shall be given an option to choose either the skill courses being offered by the college or to choose a certificate course being offered by industries / Professional bodies / APSSDC, COURSERA or any other accredited bodies as approved by the concerned BOS.
5. The Board of studies of the concerned discipline of Engineering shall review the skill advanced courses being offered by eligible external agencies and prepare a fresh list every year incorporating latest courses based on industrial demand.
6. If a student chooses to take a Certificate Course offered by industries/Professional bodies/APSSDC or any other accredited bodies, in lieu of the skill advanced course offered by the Department, the credits shall be awarded to the student upon producing the Course Completion Certificate from the agency / professional bodies as approved by the Board of studies.
7. If a student prefers to take a certificate course offered by external agency, the department shall mark attendance of the student for the remaining courses in that semester excluding the skill course in all the calculations of mandatory attendance requirements upon producing a valid certificate as approved by the concerned Board of Studies, the student is deemed to have fulfilled the attendance requirement of the course and acquire the credits assigned to the course.
8. A committee shall be formed at the level of the college to evaluate the grades / marks given for a course by external agencies and convert to the equivalent marks / grades. The recommended conversions and appropriate grades / marks are to be approved by the Institute / Academic Council.
9. The course will be evaluated at the end of the semester for 50 marks (record: 15 marks and viva-voce: 35 marks) along with laboratory end examinations in the presence of external and internal examiner (course instructor or mentor). There are no internal marks for the skill oriented courses.

## 7.9 Course Numbering Scheme

The Course code consists of Eight / Nine characters. The following is the structure of the course Code (Figure 1).

2	0	C	S	3	2	0	1	A
Regulation		Course Category		Kind of course	Semester	Type	Course Number	[Elective code]
Last two digits of Regulation offered(i.e. 20 for PVP20 regulations)	HS-Humanities and Social Sciences including Management courses BS-Basic Science courses ES-Engineering Science MC- Mandatory Courses		1. Institutional Core(i.e. HS,BS,ES,MC)	1-First  2-Second  3-Third  4-Fourth  5- Fifth  6-Sixth  7-Seventh  8-Eighth	0-Theory  1-Theory studied in MOOCS Mode  4- NCC/NSS  5- Practical  6-Project Work  7-Seminar  8. Summer/ Industrial/ Research Internship	i.e. Course sequence Number in that semester	In case if the course is Elective then this field will specify the elective code (i.e. A,B,C...)	
	Respective Handling department code is placed		2. Open Elective/ Job Oriented Elective					
	In case of Professional Core/ Professional Elective courses department code is placed: CE-Civil Engineering EE- Electrical & Electronics Engineering ME- Mechanical Engineering EC- Electronics and Communication Engineering CS- Computer Science & Engineering IT- Information Technology		3. Professional Core					
			4. Professional Elective					
	Respective chosen minor department code is placed		5. Minor Course					
	Respective department code is placed		6. Honors Course					
	Respective Handling department code is placed		7. Humanities and Social Science Elective					
	SO- Skill Oriented Course SA- Skill Advanced Course SS- Soft Skill Course		8. Skill Oriented/ Skill Advanced/ Soft Skill Course					

Figure 1: Course numbering scheme

### 7.10 Medium of Instruction and Examination

The medium of instruction and examinations shall be English.

### 7.11 Registration

Every student has to register himself/herself for the courses in each semester individually at the time as specified in academic calendar.

## 8. Choice Based Credit System (CBCS)

Choice Based Credit System (CBCS) shall be introduced with effect from 2019-20 academic years, based on guidelines of the statutory bodies in order to promote:

- Activity based learning
- Student centered learning
- Students to choose courses of their choice
- Learning at their own pace

Flexibility is extended to the fast learning students to take the courses of higher semesters in advance as per their convenience to concentrate on their placement activity/ project work, etc., during the VII/VIII semesters.

### 8.1 CBCS Course Registration Policy

Fast learning students can register for additional courses from higher semesters by satisfying the pre-requisite course(s) to a maximum of 8 credits in each of the semesters from III semester onwards along with the regular semester courses as prescribed. There is no minimum limit to the credits for taking additional courses.

#### Eligibility for choosing CBCS flexibility:

- **Regular Students (4 Year duration)**, entering the  $n^{\text{th}}$  semester with no backlog courses up to  $(n-1)^{\text{th}}$  semester, are only eligible to opt for this flexibility.
- **Lateral entry students (3 year duration)** with 70% Marks in their Diploma are eligible to opt for this flexibility during III and IV Semesters. Those students entering into V/ VI /VII semester with no backlog courses up to  $(n-1)^{\text{th}}$  semester, are only eligible to opt for this flexibility.

The list of additional courses offered in the even & odd semesters, registration dates will be notified by the respective departments well in advance.

A student can withdraw from the respective course within 15 days after the commencement of the course.

The choice of utilizing this flexibility is purely optional to the students.

A minimum number of students required to register for an additional course shall be twenty (20). In case, the registered strength for the additional course is less than twenty (20), the course may be offered on the recommendation of the Head of the Department and subsequent approval of the Principal.

### 8.2 Continuous Internal Evaluation (CIE) for CBCS opted Courses

The contact hours, continuous assessment pattern, eligibility criteria to write end semester examinations and revaluation scheme for these additional courses will be as per the current

academic regulations [PVP20].

### **8.3 Eligibility to appear CBCS registered courses for Semester End Examinations**

The registered additional courses will be dealt separately as individual courses for the calculation of attendance and continuous assessment of marks for assessing the eligibility to write the end semester examinations for these courses.

The performance of the student in the registered additional courses will be separately mentioned in the semester end grade card and it will not be taken into account for the calculation of the SGPA for that semester.

The performance of the student in the registered additional courses will be taken into account in the corresponding semesters.

### **8.4 CBCS Course Detention**

- 8.4.1** In case, the student is detained for want of minimum specified attendance and continuous assessment marks criterion either in the regular semester or in the additional courses, he/she will forfeit the eligibility for registering additional courses from that semester onwards. However, the additional courses completed by the students in the earlier semesters will be valid and taken into consideration.
- 8.4.2** In case, the student is detained for want of minimum specified attendance and continuous assessment marks criterion in the regular semester but meets minimum specified attendance and continuous assessment marks criterion in the registered additional courses, he/she shall write the end semester examinations for these additional courses along with the regular students in the corresponding semester only.
- 8.4.3** In case, the student fails / is absent in the end semester examinations of the registered additional courses or in the regular semester courses in a particular semester, he will forfeit the eligibility for registering additional courses from that semester onwards. However, the additional courses completed by the students in the earlier semesters will be valid and taken into consideration. They can write the end semester examinations for additional courses in which they failed/were absent, along with regular students in the corresponding semesters only.
- 8.4.4** The criterion for the promotion to higher semesters will be as per PVP20 regulations, taking only the regular semester courses into consideration for the fast learners.
- 8.4.5** Additional courses, in which the fast learning student fails, will not be considered as backlogs for them.
- 8.4.6** The fast learning students shall register for all the courses of a regular semester excluding the courses completed in the previous semesters.
- 8.4.7** The credits scored by students through CBCS subjects shall not be considered for credit promotion from II year to III year or from III year to IV year B.Tech.
- 8.4.8** The student opting for the said flexibility will be considered for the award of the division on par with other regular students.
- 8.4.9** The students who have earlier history of indulging in malpractices in semester end examinations are not eligible for opting CBCS.



- 8.4.10** If the student fails to register for opted CBCS courses for semester end examination, he/she will forfeit the eligibility for registering additional courses from that semester onwards and marks secured through continuous assessment will not be considered.
- 8.4.11** The choice of utilizing this flexibility is purely optional to the students.
- 8.4.12** If a student fails/absent in a CBCS course, he/she is bound to appear in the same course when studied in regular semester.

## **9 EXAMINATIONS & SCHEME OF EVALUATION**

### **9.1 Description of Evaluation**

1. **Continuous Internal Evaluation (CIE):** The performance of the student in each course is evaluated by the faculty/course coordinator all through the semester; with mid-term tests (sessional-1 and sessional-2), assignments, project reviews, viva-voce, laboratory assessment and other means covering the entire syllabus of the course.
2. **Semester End Examination (SEE):** It shall be conducted by chief controller of examinations at the end of each semester, as per the academic calendar and with a written examination for theory courses and practical/project examination with built-in oral part for laboratory/project.

### **9.2 Continuous Internal Evaluation (CIE)**

#### **9.2.1 Theory Courses**

- a) For theory subjects, during a semester, there shall be two mid-term examinations. Each mid-term examination consists of (i) one objective examination (20 multiple choice questions) for 10 marks for duration of 20 minutes (ii) one descriptive examination (3 full questions for 5 marks each) for 15 marks for duration of 90 minutes and (iii) one assignment for 5 marks. Mid-1 shall be conducted from first 50% of the syllabi.
- b) In the similar lines, the second objective, descriptive examinations, assignment shall be conducted on the rest of the 50% syllabus.
- c) The total marks secured by the student in each mid-term examination are evaluated for 30 marks. The first mid marks (Mid-1) consisting of marks of objective examination, descriptive examination and assignment shall be submitted by the concerned teacher to the department examination section within one week after completion of first mid examination.
- d) The mid marks submitted to the department examination section shall be displayed in the concerned department notice boards for the benefit of the students.
- e) If any discrepancy found in the submitted Mid-1 marks, it shall be brought to the notice of Head of the department within one week from the submission.
- f) Second mid marks (Mid-2) consisting of marks of objective examination, descriptive Examination and assignment shall also be submitted by the concerned teacher to the department examination section within one week after completion of second mid examination and it shall be displayed in the notice boards. If any discrepancy found in

the submitted mid-2 marks, it shall be brought to the notice of Head of the department within one week from the submission.

g) Internal marks can be calculated with 80% weightage for better of the two mids and 20% Weightage for other mid exam.

Example:

**Mid-1 marks** = Marks secured in (Objective-1+Descriptive examination-1  
+Assignment-1)

**Mid-2 marks** = Marks secured in (Objective-2+Descriptive examination-2  
+Assignment-2)

**Final internal Marks** = (Best of (Mid-1/Mid-2) marks x 0.8  
+ Least of (Mid-1/Mid-2) marks x 0.2)

h) With the above criteria, concerned departments have to display the consolidated marks obtained by the students in the department notice boards. If any discrepancy found, it shall be brought to the notice of Head of the department through proper channel within one week with all proofs.

### 9.2.2 Mandatory Learning Courses

Mandatory Course (M.C): Environmental Sciences, Universal Human Values, Ethics, Indian Constitution, Essence of Indian Traditional Knowledge, Life Sciences for Engineers, etc. non-credit (zero credits) mandatory courses. Environmental Sciences shall be offered compulsorily as mandatory course for all branches. A minimum of 75% attendance is mandatory in these subjects. There shall be an external examination for 70 marks and it shall be conducted by the college internally. Two internal examinations shall be conducted for 30 marks and a student has to secure at least 40% of the marks for passing the course. No marks or letter grade shall be printed in the transcripts for all mandatory non-credit courses, but only Completed (Y)/Not-completed (N) will be specified.

### 9.2.3 Drawing Based Courses:

For the subject having design and / or drawing, (such as Engineering Graphics, Engineering Drawing, Machine Drawing) and estimation, the distribution shall be 30 marks for internal evaluation (15 marks for continuous Assessment (day-to-day work) and 15 marks for internal tests) and 70 marks for end examination. There shall be two internal tests in a Semester for 15 marks each and final marks can be calculated with 80% weightage for better of the two tests and 20% weightage for other test and these are to be added to the marks obtained in day to day work

### 9.2.4 Laboratory Courses

For practical subjects there shall be continuous evaluation during the semester for 15 internal marks and 35 end examination marks. The internal 15 marks shall be awarded as follows: day today work - 5 marks, Record-5 marks and the remaining 5 marks to be awarded by conducting an internal laboratory test. The end examination shall be conducted by the teacher concerned and external examiner appointed.

**Table: Distribution of Marks (CIE)**

S. No.	Criterion	Marks
1	Day to Day Evaluation	5
2	Record	5
3	Internal Examination	5

### 9.2.5 MOOCs Courses

There shall be a Discipline Centric Elective Course through Massive Open Online Course (MOOC) as Program Elective course. The student shall register for the course (Minimum of 12 weeks) offered by SWAYAM/NPTEL through online with the approval of Head of the Department. The Head of the Department shall appoint one mentor for each of the MOOC subjects offered. The student needs to register the course in the SWAYAM/NPTEL portal. During the course, the mentor monitors the student's assignment submissions given by SWAYAM/NPTEL. The student needs to submit all the assignments given and needs to take final exam at the proctor center. The student needs to earn a certificate by passing the exam. The student will be awarded the credits given in curriculum only by submission of the certificate. In case if student does not pass subjects registered through SWAYAM/NPTEL, the same or alternative equivalent subject may be registered again through SWAYAM/NPTEL in the next semester with the recommendation of HOD and shall pass.

## 9.3 Semester End Examination (SEE)

### 9.3.1 Theory Courses:

- The semester end examinations will be for 70 marks consisting of five questions carrying 14 marks each. Each of these questions is from one unit and may contain sub-questions. For each question there will be an "either" "or" choice, which means that there will be two questions from each unit and the student should answer either of the two questions.
- The job oriented skill courses may be registered at the college or at any accredited external agency. A student shall submit a record/report on the on the list skills learned. If the student completes job oriented skill course at external agency, a certificate from the agency shall be included in the report. The course will be evaluated at the end of the semester for 50 marks (record: 15 marks and viva-voce: 35 marks) along with laboratory end examinations in the presence of external and internal examiner (course instructor or mentor). There are no internal marks for the job oriented skill courses.

### 9.3.2 Laboratory Courses: 35 marks

- i. The Semester end examination for laboratory courses shall be conducted with three hour duration at the end of semester for 35 marks as given below:

**Table : Distribution of Marks (SEE)**

S.No.	Criterion	Marks
1	Procedure	5
2	Experiment / Programme Execution	15
3	Result	10
4	Viva-Voce	5

- ii. Each Semester end Laboratory Examination shall be conducted by an External Examiner along with the Internal Examiner.

### **Internship: 50 Marks (Only external marks)**

Evaluation of the summer internships: It shall be completed in collaboration with local industries, Govt. Organizations, construction agencies, Industries, Hydel and thermal power projects and also in software MNCs in the area of concerned specialization of the UG programme. Students shall pursue this course during summer vacation just before its offering as per course structure. The minimum duration of this course is at least 6 weeks. The student shall register for the course as per course structure after commencement of academic year. A supervisor / mentor / advisor have to be allotted to guide the students for taking up the summer internship. The supervisor shall monitor the attendance of the students while taking up the internship. Attendance requirements are as per the norms of the Institute. After successful completion, students shall submit a summer internship technical report to the concerned department and appear for an oral presentation before the departmental committee consists of an external examiner; Head of the Department; supervisor of the internship and a senior faculty member of the department. A certificate from industry / skill development center shall be included in the report. The report and the oral presentation shall carry 40% and 60% weightages respectively. It shall be evaluated for 50 external marks at the end of the semester. There shall be no internal marks for Summer Internship. A student shall secure minimum 40% of marks for successful completion. In case, if a student fails, he/she shall reappear as and when semester supplementary examinations are conducted by the Institute.

## **Major Project**

### **(Project - Project work, seminar and internship in industry):**

In the final semester, the student should mandatorily register and undergo internship and in parallel he/she should work on a project with well-defined objectives. At the end of the semester the candidate shall submit an internship completion certificate and a project report. A student shall also be permitted to submit project report on the work carried out during the internship. The project report shall be evaluated with an external examiner.

**Evaluation:** The total marks for project work for **200 marks** and distribution shall be **60 marks for internal** and **140 marks for external** evaluation. The supervisor assesses the student for 30 marks (Report: 15 marks, Seminar: 15 marks). At the end of the semester, all projects shall be showcased at the department for the benefit of all students and staff and the same is to be evaluated by the departmental Project Review Committee consisting of supervisor, a senior faculty and HOD for 30 marks. The external evaluation of Project Work is a Viva-Voce Examination conducted in the presence of internal examiner and external examiner and is evaluated for 140 marks

## 9.4 Conditions for Pass Marks

- I. Paper setting and evaluation of the answer scripts shall be done as per the procedures laid down by the Institution Examination section from time to time.
- II. To maintain the quality, external examiners and question paper setters shall be selected from premier institutes and Universities, NITs, Autonomous colleges.
- III. For non-credit mandatory courses, like Life sciences for Engineers, Environmental Sciences, Universal Human Values, Ethics, Indian Constitution, Essence of Indian Traditional Knowledge, the student has to secure 40% of the marks allotted in the internal evaluation for passing the course. No marks or letter grade shall be allotted for all mandatory non-credit courses.
- IV. A student is deemed to have satisfied the minimum academic requirements if he has earned the credits allotted to each theory/practical design/drawing subject/ project etc by securing not less than 35% of marks in the end semester exam and minimum 40% of marks in the sum total of the internal marks and end semester examination marks together.

**V. Distribution and Weightage of marks:**

The assessment of the student's performance in each course will be as per the details given

SNo	Component	Internal	External	Total
1	Theory	30	70	100
2	Lab	15	35	50
3	Mandatory	30	70	100
4	Drawing	30	70	100
5	Project	60	140	200
6	Mini Project/Internship/Industrial Training / Skill Development Programs/Research Project	-	50	50

## 9.5 Revaluation

### 9.5.1 Continuous Internal Evaluation

The continuous Evaluation scripts shall be shown to the students before finalizing the marks. However, if the student has any concern, not addressed before the finalization of marks, he/she may submit the application for revaluation to the concerned head of the department. The Head of the Department may constitute a two-member committee for re-evaluating the script. The evaluation of the committee is final and binding.

### 9.5.2 Semester End Examination

1. As per the notification issued by the Controller of Examinations, the students can submit the applications for revaluation, along with the requisite fee receipt for revaluation of his/her answer script(s) of theory course(s), if he/she is not satisfied with the marks obtained.
2. The Controller of Examinations shall arrange for re-evaluation of those answer script(s).
3. A new external examiner, other than the first examiner, shall re-evaluate the answer script(s).

4. Revaluation marks will be taken into consideration only if the difference between the two valuations is more than or equal to 15%. Better marks between the two shall be taken into consideration. However, if the revaluation marks facilitates passing of the candidate, then the revaluation marks will be considered even if the difference of marks is less than 15%.
5. If the difference of marks between the two valuations is more than 20%, the answer script will be referred to third valuation. The average of nearest two marks will be awarded.

### **9.6 Withholding of Results**

If the student has not paid the dues to the college, or if any case of malpractice or indiscipline is pending against him, the result of the student will be kept as withheld and he/she will not be allowed to enter the next semester. His/her degree shall be considered as withheld in such cases.

## **10 CRITERIA TO ATTEND SEMESTER END EXAMINATION AND PROMOTION TO HIGHER SEMESTER**

### **10.1 Eligibility for Semester End Examinations**

- 10.1.1 Students shall put in a minimum average attendance of 75% in the courses. computed by totalling 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 put together as the numerator, to be eligible to write semester end examinations.
- 10.1.2 Condonation of shortage in attendance may be recommended by respective Heads of Departments 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.
- 10.1.3 Students, having more than 65% and less than 75% of attendance, shall have to pay requisite fee towards condonation.

### **10.2 Promotion Rules**

1. A student shall be promoted from first year to second year if he fulfills the minimum attendance requirements.
2. A student will be promoted from II year to III year if he fulfills the academic requirement of 40% of credits up to either II year I-Semester or II year II-Semester from all the examinations, whether or not the candidate takes the examinations and secures prescribed minimum attendance in II year II semester.
3. A student shall be promoted from III year to IV year if he fulfills the academic requirements of 40% of the credits up to either III year I semester or III year II semester from all the examinations, whether or not the candidate takes the examinations and secures prescribed minimum attendance in III year II semester.

## 11. SUPPLEMENTARY EXAMINATIONS

### 1. General

Semester end Supplementary examinations shall be conducted along with regular semester end examinations.

### 2 Advanced Supplementary Exams

Candidate(s), who fails in Theory or Laboratory courses of VIII semester, can appear for advanced supplementary examination conducted within one month after declaration of the revaluation results. However, those candidates who fail in the advanced supplementary examinations of VIII semester shall appear for subsequent examinations along with regular candidates conducted at the end of the respective academic year.

## 12 READMISSION CRITERIA

A candidate, who is detained in a semester due to lack of attendance/credits, has to obtain written permission from the Principal for readmission into the same semester after duly fulfilling all the required norms stipulated by the college in addition to paying an administrative fee of **Rs. 1,000/-**

### Rules for calculation of attendance for readmitted students

- a) Number of classes conducted shall be counted from the commencement day of the semester concerned, irrespective of the date of payment of tuition fee.
- b) They shall submit a written request to the principal of the college, along with a challan paid towards tuition and other fee, for readmission before the commencement of the class work.
- c) They can get the information regarding date of commencement of class work for each semester that will be made available in the college notice boards/website from time to time.

## 13 BREAK IN STUDY

Student, who discontinues the studies for valid reason permitted by the principal, shall get readmission into appropriate semester of B.Tech. programme after break-in study, with the prior permission of the Principal and following the transitory regulations applicable to such batch in which he/she joins. An administrative fee of **Rs. 1000/-** per each year of break in study, in addition to the prescribed tuition and special fee has to be paid by the candidate to condone his/her break in study.

## 14 GAP YEAR

Gap Year – concept of Student Entrepreneur in Residence shall be introduced and outstanding students who wish to pursue entrepreneurship are allowed to take a break of one year at any time after I year/II year/III year to pursue entrepreneurship full time. This period shall be counted for the maximum time for graduation. An evaluation committee at Institution level shall be constituted to evaluate the proposal submitted by the student and the committee shall decide on permitting the student for availing the Gap Year.

**15 TRANSITORY REGULATIONS**

A candidate, who is detained or discontinued in a semester, on re-admission, the academic regulations under which he/she has originally admitted will continue to be applicable to him/her on re-admission.

**16 ELIGIBILITY FOR AWARD OF B.TECH DEGREE**

1. The B.Tech. Degree shall be conferred on a candidate who satisfies the following requirements.
  - a) A Regular student (four year programme) shall register and secure himself/herself for **160** Credits
  - b) A Lateral Entry student (three year programme) shall register and secure himself/herself for **121** credits

**2. Award of Division**

The criteria for award of division, after successful completion of programme are as shown in Table:

**Table : Criteria for Award of Division**

<b>Class Awarded</b>	<b>CGPA to be secured</b>	<b>Remarks</b>
First class with distinction	$\geq 7.75$ ( Without any supplementary appearance)	From the CGPA secured from 160 credits
First class	$\geq 6.75$	
Second class	$\geq 5.75$ to $< 6.75$	
Pass Class	$\geq 5.00$ to $< 5.75$	

- Awarded only if all the courses prescribed are cleared in single attempt within four years for regular candidates and three years for lateral entry candidates
- Detained and break-in study candidates are not eligible for the award of First Class with Distinction
- The cases of students who are absent for semester end examination only once in his/her duration of B.Tech. programme on valid medical grounds/humanitarian grounds shall also be considered for the award of First class with Distinction subject to the recommendations of the committee constituted by the Principal.

For the purpose of awarding First, Second and Pass Class CGPA obtained in the examinations appeared within the maximum period allowed for the completion of the programme shall be considered.

**Consolidated Grade Card**

A consolidated grade card containing credits & grades obtained by the students will be issued after successful completion of the four year B.Tech Programme.



**17 CONDUCT AND DISCIPLINE**

1. Students shall conduct themselves within and outside the premises of the Institute in a manner befitting the students of our Institution.
2. As per the order of Honorable Supreme Court of India and AICTE guidelines, ragging in any form is considered a criminal offence and is banned. Ragging within or outside any educational institution is prohibited. Ragging means doing an act, that causes or is likely to cause insult or annoyance or fear of apprehension or threat or intimidation or outrage of modesty or injury to a student. Any form of ragging will be severely dealt with as per AP Prohibition of Ragging Act-1997 section-4.

**Table : Punishments for Ragging**

<b>Nature of ragging</b>	<b>Punishment</b>
Teasing, embarrassing and humiliating	Imprisonment up to 6 months or fine up to Rs.1,000/- or both
Assaulting or using criminal force or criminal intimidation	Imprisonment up to 1 year or fine up to Rs.2,000/- or both
Wrongfully restraining or confining or causing hurt	Imprisonment up to 2 years or fine up to Rs.5,000/- or both
Causing grievous hurt kidnapping or raping or committing unnatural offence	Imprisonment up to 5 years and fine up to Rs.10,000/-
Causing death or abetting suicide	Imprisonment up to 10 years and fine up to Rs.50,000/-

3. A student who is convicted of an offence and punished with imprisonment for a term of more than six months shall not be admitted into the institution.
4. Whenever any student complains of ragging to the head or manager of an educational institution, such head or manager should inquire into the complaint and if the complaint is prima-facie found true, should suspend the student or students complained against.
5. If the head or manager of an educational institution fails or neglects to take action in the manner specified in the Act, the person shall be deemed to have abetted the offence and shall be punished with the punishment provided for the offence.
6. If a student commits suicide due to or in consequence of ragging, the person who commits such ragging shall be deemed to have abetted such suicide.
7. The following acts of omission and/or commission shall constitute gross violation of the code of conduct and are liable to invoke disciplinary measures.
  - i. Lack of courtesy and decorum; indecent behaviour anywhere within or outside the campus
  - ii. Possession, consumption or distribution of alcoholic drinks or any kind of narcotics or hallucinogenic drugs.

The following activities are not allowed within the campus:

- Mutilation or unauthorized possession of library books.
- Noisy and unseemly behaviour, disturbing studies of fellow students.
- Hacking computer systems (such as entering into other person's areas without prior permission, manipulation and/or damage of computer hardware and software or any other cybercrime etc.)
- Use of mobile phones.
- Plagiarism of any nature.
- Any other act of gross indiscipline as decided by the Institute from time to time.
- Commensurate with the gravity of offense, the punishment may be reprimand, fine, expulsion from the institute/ hostel, debarment from a examination, disallowing the use of certain facilities of the Institute, rustication for a specified period or even outright expulsion from the Institute, or even handing over the case to appropriate law enforcement authorities or the judiciary, as required by the circumstances.
- For an offence committed in (i) a hostel, (ii) a department or in a class room and (iii) elsewhere, the Chief Warden, the Head of the Department and the Principal, respectively, shall have the authority to reprimand or impose fine.
- Cases of adoption of unfair means and/or any malpractice in an examination shall be reported to the Principal for taking appropriate action.
- Unauthorized collection of money in any form is strictly prohibited.
- Detained and break-in-study candidates are allowed into the campus for academic purposes only with the permission from authorities.
- Misconduct committed by a student outside the Institute campus but having the effect of damaging, undermining & tarnishing the image & reputation of the institution will make the student concerned liable for disciplinary action commensurate with the nature and gravity of such misconduct.
- The disciplinary action committee constituted by the Principal, shall be the authority to investigate the details of the offence, and recommend disciplinary action based on the nature and extent of the offence committed.
- Grievance redressal committee, constituted by the Principal, shall deal with all grievances pertaining to the academic/ administrative and disciplinary matters.
- All the students must abide by the code and conduct rules of the Institute.

## 18 MALPRACTICES

The Principal shall refer the cases of malpractices by students in internal assessment tests and end semester examinations, to a malpractice enquiry committee constituted for the purpose. The committee shall follow the approved scales of punishment.

The committee consists of:

1. Heads of Department (Three)
2. Controller of Examinations
3. Assistant Controller of Examinations

**Table – 10: Disciplinary action for malpractices/improper conduct in examinations**

	<b>Nature of Malpractices/Improper conduct</b>	<b>Punishment</b>
1 (a)	If the candidate possesses or keeps accessible, any paper, note book, programmable calculators, mobile phones, pager, palm computers or any other form of material concerned with or related to the subject of the examination (theory or practical) in the examination hall but has not made use of (material shall include any marks on the student's body that can be used as an aid in the subject of the examination)	Expulsion from the examination hall and cancellation of the performance in that subject only.
(b)	If the candidate gives assistance or guidance or receives it from any other candidate orally or by any other body language methods or communicates through mobile phones with any candidate or persons in or outside the exam hall in respect of any matter.	Expulsion from the examination hall and cancellation of the performance in that subject only of all the candidates involved. In case of an outsider, he will be handed over to the police and a case is registered against him.
2	If the candidate has copied in the examination hall from any paper, book, programmable calculators, palm computers or any other form of material relevant to the subject of the examination (theory or practical) in which the candidate is appearing.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work. He shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The hall ticket of the candidate is to be cancelled.
3	If the candidate impersonates any other candidate in connection with the examination.	The candidate who has impersonated shall be expelled from examination hall. The candidate is also debarred and forfeits the seat. The performance of the original candidate, who has been impersonated, shall be cancelled in all the subjects of the examination (including practicals and project work) already appeared and shall not be allowed to appear for examinations of the remaining subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all University examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat. If the imposter is an outsider, he will be handed over to the police and a case is registered against him.

4	If the candidate smuggles in an answer book or additional sheet or takes out or arranges to send out the question paper during the examination or answer book or additional sheet, during or after the examination.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred for two consecutive semesters from class work and all other examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
5	If the candidate uses objectionable, abusive or offensive language in the answer paper or in letters to the examiners or writes to the examiner requesting him to award pass marks.	Cancellation of the performance in that subject.
6	If the candidate refuses to obey the orders of the Chief Superintendent/Assistant Superintendent / any officer on duty or misbehaves or creates disturbance of any kind in and around the examination hall or organizes a walk out or instigates others to walk out, or threatens the officer-in charge or any person on duty in or outside the examination hall of any injury to his person or to any of his relations whether by words, either spoken or written or by signs or by visible representation, assaults the officer-in-charge, or any person on duty in or outside the examination hall or any of his relations, or indulges in any other act of misconduct or mischief which results in damage to or destruction of property in the examination hall or any part of the Institute campus or engages in any other act which in the opinion of the officer on duty amounts to use of unfair means or misconduct or has the tendency to disrupt the orderly conduct of the examination.	In case of students of the Institute, they shall be expelled from examination halls and cancellation of their performance in that subject and all other subjects the candidate(s) has (have) already appeared and shall not be permitted to appear for the remaining examinations of the subjects of that semester/year. The candidates also are debarred and forfeit their seats. In case of outsiders, they will be handed over to the police and a police case is registered against them.
7	If the candidate leaves the exam hall taking away answer script or intentionally tears of the script or any part thereof inside or outside the examination hall.	Expulsion from the examination hall and cancellation of performance in that subject and all the other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that

		semester/year. The candidate is also debarred for two consecutive semesters from class work and all other examinations. The continuation of the course by the candidate is subject to the academic regulations in connection with forfeiture of seat.
8	If the candidate possesses any lethal weapon or firearm in the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work and shall not be permitted for the remaining examinations of the subjects of that semester/year. The candidate is also debarred and forfeits the seat.
9	If student of the Institute, who is not a candidate for the particular examination or any person not connected with the Institute indulges in any malpractice or improper conduct mentioned in clause 6 to 8.	Student of the Institute: Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work. He shall not be permitted for the remaining examinations of the subjects of that semester/ year. The candidate is also debarred and forfeits the seat. Person(s) who do not belong to the Institute: Will be handed over to police and a police case will be registered against them.
10	If the candidate comes in a drunken condition to the examination hall.	Expulsion from the examination hall and cancellation of the performance in that subject and all other subjects the candidate has already appeared including practical examinations and project work. He shall not be permitted for the remaining examinations of the subjects of that semester/year.
11	Copying detected on the basis of internal evidence, such as, during valuation or during special scrutiny.	Cancellation of the performance in that subject and all other subjects the candidate has appeared including practical examinations and project work of that semester/year examinations.
12	If any malpractice is detected which is not covered in the above clauses 1 to 11, shall be awarded suitable punishment.	

Note: Special squads may be formed to oversee the proper conduct of examinations.

## 19 OTHER MATTER

**19.1** Scribe facility is extended to B Tech students strictly following the guidelines issued under F. No. 16-110/2003-DD.III Dt. 26-02-2013 by the Ministry of Social Justice and Empowerment, Department of Disability Affairs, Govt. of India.

**19.2** Students who are suffering from contagious diseases are not allowed to appear either continuous internal assessment or semester end examinations

- 19.3** The students who participate in coaching/tournaments held at State/National/International levels through University/Indian Olympic Association during semester end examination period will be promoted to subsequent semesters till the entire programme is completed as per the guidelines of University Grants Commission Letter No. F.1-5/88 (SPE/PES), dated 18-08-1994.
- 19.4** Based on the recommendations of HOD & Principal, exemption from attending the class work shall be given to those students who secure placement and intend to join as the employer in VIII semester of B.Tech. Special Continuous Internal Evaluation (Assignment Tests, Sessional, etc.,) will be arranged to such candidates separately if necessary. However, they shall appear for Semester End Examinations as per the Academic Calendar
- 19.5** The Principal shall deal with any academic problem, which is not covered under these rules and regulations, in consultation with the Heads of the Departments in an appropriate manner, and subsequently such actions shall be placed before the academic council for ratification. Any emergency modification of regulation, approved in the Heads of the Departments Meetings, shall be reported to the academic council for ratification.

## 20 GENERAL

- 1 Wherever the words “he”, “him”, “his”, occur in the regulations, they may include “she”, “her”, “hers”.
- 2 The academic regulations should be read as a whole for the purpose of any interpretation.
- 3 In case of any doubt or ambiguity in the interpretation of above rules, the decision of the principal is final.

## 21 INSTITUTE RULES AND REGULATIONS

- 1 Use of **Mobile phones** is strictly prohibited inside the Institute academic area.
- 2 Students should come to Institute in **proper dress**.
- 3 All students should wear **Identity cards** in the Institute premises.
- 4 Students should be present in their respective classrooms **before the commencement of class sharply**.
- 5 Students should not leave the Institute premises without prior permission of their respective Heads of the departments during Institute working hours.
- 6 Students should maintain silence in the class rooms during working periods.
- 7 Sitting / wandering of the students at the stair cases, corridors, cycle stands or the areas within the Institute premises is strictly prohibited.
- 8 Usage of Vehicle horn inside the Institute premises is prohibited.

## 22 AMENDMENTS TO REGULATIONS

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

Oratory

**PRINCIPAL**