

**STATE BOARD OF TECHNICAL EDUCATION, KERALA**

**Directorate of Technical Education,  
Thiruvananthapuram, Kerala**

Rules and Regulations for Diploma Programmes in Engineering and  
Technology / Commercial Practice / Management in the Polytechnic  
Colleges recognized by the State Board of Technical education, Kerala

Outcome Based Curriculum - REVISION 2021

Prepared by

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## Preface

Curriculum serves as the foundation on which educational edifice is built upon. Curriculum needs constant updation after ongoing scrutiny, to stay relevant and on par with the developments in the concerned field of Technical knowledge.

State Board of Technical Education Kerala is the affiliating body of Polytechnic Colleges of Kerala, framing rules and regulations for the conduct of Polytechnic Education. Periodical Revision of all the Polytechnic programmes conducted by the SBTE is undertaken by State Institute of Technical teachers Training and Research (SITTTR).

This Revision Curriculum 2021 document pertaining to Diploma Programmes in Engineering and Technology /Commercial Practice/ Management is an outcome of such an effort. The Revision 21 is proposed to be an outcome based curriculum, in line with the Model Curriculum published by the AICTE. The curriculum envisions to measure the progress of students in the three parameters: Program Educational Objectives (PEO), Program Outcomes (PO) and Course Outcomes (CO).

The task of the curriculum revision is time consuming and needs to be undertaken with extreme diligence. For facilitating the process, the following committees were constituted under the overall guidance of the Director of Technical education:

1. Curriculum Revision Monitoring Committee
2. Curriculum Revision Implementation Committee
3. Curriculum Revision Academic Committee
4. Curriculum Revision Core Committee
5. Handbook preparation committee

Further, inputs from Industry were gathered from various experts in the respective fields. The draft syllabus of the different programmes was vetted, by NITTTR Chennai.

The curriculum is designed to have a total credits of 120 including courses in basic sciences and engineering with focus on fundamentals, discipline level courses and electives both from disciplines and cross disciplines. Student Induction program of the AICTE is introduced to make the students comfortable with the new environment, develop awareness of the people around them and the society at large. Internship is included, to ensure that students are on par with changes in Industry. Built-in flexibility in terms of program elective and open elective courses, Course on Entrepreneurship and startups inclusion of Activity points for student achievements in Extra curricular and cocurricular activities are other areas included. Thus the Curriculum revision is envisaged to be, contemporary, socially relevant and Industry ready.

# CHAPTER 1

## Definitions

In these rules and regulations unless the context otherwise requires:

### 1.1 Academic Calendar

Academic calendar means the calendar of academic activities undertaken during an academic year as prescribed by the State Board of Technical Education, Kerala.

### 1.2 Academic Council

In relation to a polytechnic means a Committee comprising of Heads of Department, Office Superintendent with Principal as the convenor for ensuring the effective implementation of all academic activities including curricular, cocurricular, extracurricular and other activities envisioned for the effective implementation of outcome based curriculum.

### 1.3 Academic year

Academic year in relation to a programme means 10 months spanning two successive calendar years, which includes instructional periods, holidays and examinations which shall invariably consist of 2 semesters called odd and even semesters.

### 1.4 Activity points

Activity points are points to be earned by students through participation in a variety of extracurricular, and cocurricular and other activities.

### 1.5 Advisory Committee

Advisory Committee in relation to a programme means a Committee comprising of Head of Department, Faculty advisor, Student Counselor and any other faculty or supporting staff assigned to assist Faculty Advisor for monitoring and supporting all diverse activities of a particular group/batch of students and to interact with the parents

## 1.6 Audit Course

Audit courses are mandatory courses carrying no credit, but essential for the award of Diploma.

## 1.7 Contact hours / Instructional hours

60 minutes of theory /tutorial or practical sessions constitute a contact / instructional hour.

## 1.8 Course

Course means the study of an individual subject in a particular semester which shall include theory, practical, seminar, project work, internship and in plant training.

## 1.9 Course Categories

Course categories mean the distribution of courses for a programme namely Humanities and Social Sciences, Basic Sciences, Engineering Sciences, Program Basic Courses, Program Core courses, Program elective courses, Open elective courses, Project work and internship / in - plant training.

## 1.10 Course outcomes

Course outcomes are the predefined statements which represent the outcomes to be achieved by students at the end the course which should be mapped with Program outcomes/Graduate attributes.

## 1.11 Credit

Credit usually means the sum of lecture hours per week and half the hours of practical/drawing allotted for teaching the course specified in the curriculum. A student earns as much number of credits for a course if he completes the prescribed course as per the curriculum and satisfies the criteria fixed for such course by the State Board of Technical Education Kerala.

## 1.12 Curriculum

Curriculum for a programme means a published document prepared by the State Board of Technical Education which states the educational objectives and outcomes detailing the integrated sequence of areas of study covered under the programme.

## 1.13 Diploma

Diploma is an academic credential issued by State Board of Technical Education to a candidate on successful completion of the programme as envisaged in the curriculum.

## 1.14 Elective Courses

- A. **Program elective course** - from branch specific emerging areas
- B. **Open elective course** - from other Interdisciplinary and /or emerging subjects ` as specified in the curriculum concerned

## 1.15 Faculty Advisor

Faculty Advisor means a teacher who is in charge of a particular batch of students of a programme with the responsibility of monitoring the diverse activities of the batch.

## 1.16 Internal Quality Assurance Cell (IQAC)

Internal Quality Assurance Cell means a cell constituted in the institution for performing the institution level Academic Audit. The Internal Quality Assurance Cell (IQAC) in each college shall oversee and monitor all the academic activities.

## 1.17 Lateral Entry Scheme

Students possessing required criteria as laid down by AICTE are admitted to the third semester of a Full time Diploma Programme.

## 1.18 Learning Outcome

Learning outcomes define the type and depth of learning, the students are expected to achieve. Outcomes are broad statements that represent the level of knowledge, skill

and attitude to be achieved by students on the basis of predefined levels of Bloom's taxonomy.

#### 1.19 Program outcomes/Graduate attributes

Program outcomes are the predefined statements which represent the expected learning outcomes of students at the completion of a Diploma programme as defined by NBA from time to time.

#### 1.20 Programme

Programme means the entire course of study and assessment /examinations prescribed for the same, leading to the award of Diploma.

#### 1.21 Semester

Semester means a period of 5 months in an academic year, which shall include instructional periods, examinations and holidays. Odd semester in an academic year shall span from "June to October" and Even semester shall span from "November to March"

#### 1.22 State Board of Technical Education (SBTE)

SBTE means the body which functions under Higher Education Department, Government of Kerala, which regulates the matters of Diploma level and other certificate courses under Department of Technical Education in the state of Kerala.

#### 1.23 Student

Student means a candidate admitted to and registered for a programme in accordance with the rules and regulations.

#### 1.24 Tutorial hours

Tutorial hours are an interactive method of Teaching – Learning used for problem solving, discussion and clarification of Lecture content, Assignments and so on.

## CHAPTER – 2

### Rules & Regulations

This may be called the rules and regulations of the State Board of Technical Education for the Diploma Programmes in Engineering and Technology / Commercial Practice /Management. These regulations shall be applicable for students admitted from the academic year 2021 – 2022 and from the academic year 2022-2023 for Lateral Entry Scheme onwards.

- The SBTE has the right to modify the regulations from time to time.
- The decision of the SBTE shall be final and binding, in all matters related to the regulations.

#### 1. Admission

- 1.1 The SBTE shall decide the Admission policy, eligibility for admission and admission procedure from time to time.
- 1.2 The SBTE shall revoke the admission of the candidate, if at any time after admission, it is found that a candidate has not fulfilled any of the requirements stipulated by the State Board.
- 1.3 No student shall be permitted, to change the Programme to which he/she is admitted after the admission process is completed by the competent authority.
- 1.4 A student admitted to a particular Polytechnic College shall continue studying in that institute till the completion of the programme, unless he/she is permitted an inter Polytechnic College transfer as per prevailing norms.

#### 2. Medium of Instruction

The medium of instruction shall be English. All examinations, project/seminar reports and presentations shall be in English. The students may be permitted to answer the

Examinations of the Common Course, ‘ Indian constitution ‘, included in semester VI, in English/Malayalam.

### 3. Duration of Diploma Programme

- 3.1 The duration of the Diploma shall be 3 (three) academic years, consisting of 6 (six) consecutive semesters. In case of Tool & Die Engineering, additional 12 months Inplant training shall be mandatory for awarding Diploma. Lateral entry scheme students shall be directly admitted to second year. They shall pass additional courses, if any, as notified by SBTE.
- 3.2 Every academic year shall have two semesters. Odd semester in an academic year shall span from June to October (including holidays and examinations) and even semester in an academic year shall span from November to March (including holidays and examinations). A semester shall normally have 75 working days. There shall be 6 (six) periods of one hour duration of instruction each day for 5 days per week.
- 3.3 Every Diploma programme shall have a curriculum, Programme scheme and syllabus approved by the State Board of Technical Education. Handbook shall be followed for implementation of the outcome based Revision (2021) curriculum. The Handbook shall be revised by SITTTTR as and when required with the approval of SBTE.
- 3.4 The Diploma programme follows the credit system. Number of instructional hours of a course per week decides the credit. Usually, the pattern is as below:

1 Hour. Lecture (L) per week	-	1 credit
1 Hour. Tutorial (T) per week	-	1 credit
1 Hour. Practical (P)/ Drawing (D) per week	-	0.5 credit

### 4. Structure of Diploma Programme

#### 4.1 Programme Credits

The curriculum of all Diploma programmes except for the Diploma in Tool & Die shall have a total of 120 academic credits and 2 additional credits acquired through activity points. The curriculum of the Tool and Die Diploma programme shall have a total of 130 academic credits and 2 additional credits acquired through activity points.

## 4.2 Course Categories

- 4.2.1 The programmes include courses in basic sciences, engineering and Technology with focus on fundamentals, discipline level courses (Program core course) and electives both from disciplines (Program Elective) and cross disciplines (Open Elective). The Course categories are specified in the Programme scheme.
- 4.2.2 Every student shall undergo Summer Internship, Internship I & Internship II after the second and fourth semesters respectively, as specified in the curriculum.
- 4.2.3 Every programme in each Polytechnic College shall offer Open Electives as per the curriculum. Each student shall register in the sixth semester for an Open Elective course offered by a department in his/her Polytechnic College, other than his/her own. The Open Elective course shall be conducted as per the directions of the Academic Council of the College as under 21
- 4.2.4 Revised list of Program Elective courses on emerging areas and appropriate Open elective courses may be prepared by SITTR every year. The same can be offered with due approval of SBTE.
- 4.2.5 Induction training : There shall be Student Induction training program for 1<sup>st</sup> semester students as per directions and syllabus of AICTE
- 4.2.6 All the courses in various categories and the 'Audit Courses' shall have assessment. Assessment shall include Continuous Internal Assessment (CIA) / End Semester Examination (ESE) or both. It is mandatory for students to earn a 'pass' in each and every course specified in the Curriculum for the award of Diploma Certificate.
- 4.2.7 The rules for earning 'Activity points' and the various Activity segments are appended as Annexure 1

## 5. Programme registration

Each student admitted to Diploma Programme shall be offered default Programme registration. A unique Permanent Register Number shall be issued by the Controller of Technical Examinations (CTE) to each student. This unique number shall be used for all references such as further semester registration, examination registration and other academic activities.

Programme registration shall be valid for 6 (six) academic years for Full time students and 7 (Seven) years for part time students and 5 (five) academic years for students admitted under Lateral entry scheme. If a student fails to earn the Diploma within the period specified, his registration shall be treated as cancelled and he will forfeit the credits already earned for the programme.

## 6. Semester registration

Every student promoted to a semester has to complete the semester registration at the beginning of each semester. For first semester students the default semester registration shall be made along with programme registration.

## 7. Eligibility for appearing for Examination

7.1 The End Semester Examinations (ESE) shall be conducted as per the notification of the CTE. The ESE shall be conducted by the CTE / at Institution level as per the curriculum.

7.2 To be eligible to register for the examination, the candidates shall satisfy the following requirements:

- i. The candidate should have completed the Semester Registration.
- ii. The candidate should have met the attendance requirements as contained in Clause 10.
- iii. The candidate should have completed the academic requirements as contained in Clause 10.

- 7.3 Eligible candidates shall register for the examination remitting the required fee as notified by the CTE.
- 7.4 Students who do not satisfy clause 7.2 above shall have to register for the same semester as and when it is offered in the institution afresh and shall have to fulfill such conditions prescribed by the State Board of Technical Education.
- 7.5 A student shall not be allowed to re-register for a course or reappear for an examination for which he/she has gained the prescribed credits.

## 8. Promotion to next Semester

A student is promoted to the next semester only if he/she had the eligibility for appearing for the previous semester examination satisfying clause 7.

## 9. Roll out and Readmission

A student with 15 working days of continuous absence shall be removed from roll. He/she shall be readmitted only if he/she has claimed for readmission within 15 days from the date of roll out. Readmission can be sought only to the semester in which he/she was studying at the time of being rolled out. Attendance for eligibility for appearing to the semester examination in such cases shall be counted from the commencement of the semester. The Rolled out days shall be treated as Absent for calculating the attendance requirements.

## 10. Repeating a semester

A student with less than 75% of attendance and has not condoned the shortage of attendance or has attendance less than 65% or he/ she has not completed all the prescribed laboratory, practical, workshop practical or any other kind of practical course including drawing, project work etc. as prescribed in the curriculum and got certified by the Head of Department of the concerned programme shall have to repeat the semester. He/she can repeat the semester only with the succeeding batch as and when it is offered in the institution. This shall be at the discretion of the Principal, who should be satisfied on the genuineness of absence. In case, of scheme change, the student shall earn credits from equivalent / additional courses as decided by SBTE.

## 11. Assessment

### 11.1 General

11.1.1 Candidates in each semester shall be assessed by Continuous Internal Assessment (CIA) and End Semester Examination (ESE).

11.1.2 The ESE shall be held for all the Courses twice in a year – October / November session (for Odd semesters only) and April / May session (for Even semesters only). However, the End Semester Examination for the Fifth and Sixth Semesters shall be conducted in both the sessions.

11.1.3 The ESE for each course shall be conducted either as Mode 'B' or as Mode 'I' as included in the Programme scheme of the Curriculum. Mode 'B' are examinations conducted by the CTE and Mode 'I' are examinations conducted at the Institution level. The examinations at the Institution level shall be conducted through the Examination Monitoring Cell as per directions of the Academic Council of the College as included in section 21.

11.1.4 The ratio of Continuous Internal Assessment (CIA) to End Semester Examination (ESE) shall be as below:

1. Theory Courses	: 2 : 3
2. Drawing Courses	: 2 : 3
3. Laboratory/Workshop Courses/Major project/In Plant training	: 3 : 2
4. Minor Project work /Seminar	: CIA only
5. Internship I & II	: ESE only

The maximum marks for each course are included in the Programme scheme of the curriculum.

11.1.5 The CIA marks obtained by the student for all subjects in a semester are to be published at least 5 days before the commencement of the Board examinations.

### 11.2 Continuous Internal Assessment

11.2.1 Continuous Internal Assessment of Theory Courses:

- i. The CIA consists of Formative and Summative Assessments.
- ii. The CIA shall be done following appropriate Rubrics.

iii. The CIA shall be done based on the Cognitive levels of revised Blooms Taxonomy suggested in the curriculum. The faculty concerned shall carry out the CIA for the course allotted to him/her.

iv. The CIA for individual theory courses shall be computed by giving weightage to the following parameters unless otherwise specified in the curriculum.

<b>Type of Assessment</b>	<b>Tools</b>	<b>Marks</b>	<b>Guidelines</b>
Summative	<ul style="list-style-type: none"> <li>● Class Test/ Series Test</li> <li>● Open book test</li> <li>● Online Test</li> <li>● Quiz / Objective Test</li> </ul>	40% of the total internal mark	<ol style="list-style-type: none"> <li>1. Two summative assessments are mandatory</li> <li>2. Retest may be given to students whose attainment levels are not meeting the criteria set by the course coordinator.</li> </ol>
Formative	<ul style="list-style-type: none"> <li>● Case Studies</li> <li>● Portfolios</li> <li>● Note book /Class work</li> <li>● Class / Home Assignments</li> <li>● Surveys</li> <li>● Report Writing</li> <li>● Open Notes</li> <li>Exams</li> <li>● Group tasks</li> <li>● Presentations</li> <li>● Field Assignments</li> </ul>	40% of the total internal mark	<ol style="list-style-type: none"> <li>1. Three assessments are mandatory. Best two out of three shall be selected for calculating final assessment.</li> <li>2. Different tools must be selected depending upon the category/type of course.</li> <li>3. Any relevant tools other than listed, applicable for the course may be adopted for assessment.</li> <li>4. Suitable rubrics are to be applied for assessment. Sample Rubrics are included</li> </ol>
Attendance		20% of the total internal mark	This is only for CIA. Marks for attendance will not be considered for attainment calculation of course outcome.

### 11.2.2 Assessment of Practical Courses

The CIA for individual practical courses shall be computed, by giving weightage to the following parameters unless otherwise specified in the curriculum.

<b>Type of Assessment</b>	<b>Tools</b>	<b>Marks</b>	<b>Guidelines</b>
Summative	Lab Examination	20% of the total internal mark	Two tests are mandatory
Formative	Lab Work	50% of the total internal mark	<ol style="list-style-type: none"> <li>1. List of lab experiments must be given which may include some mandatory experiments.</li> <li>2. The faculty concerned may include additional experiments.</li> <li>3. For each experiment, assessment may be made and marks should be awarded as per an assessment rubric.</li> </ol>
	Open ended experiment / Micro projects	10% of the total internal mark	<ol style="list-style-type: none"> <li>1. Time for Open ended experiments /Micro project must be included in the lab hours.</li> <li>2. For first and second year students open ended experiments/ Micro project may be given as a group work and for final year it may give as an individual work.</li> </ol>
Attendance		20% of the total internal mark	This is only for CIA. Marks for attendance will not be considered for attainment calculation of course outcome.

### 11.2.3 Assessment of Drawing Courses

The CIA for individual Drawing courses shall be computed by giving weightage to the following parameters unless otherwise specified in the curriculum.

Type of Assessment	Tools	Marks	Criteria for evaluation	Criteria splitup
Summative	Two tests (average of two tests)	40% of the total internal mark	Procedure of drawing	40%
			Final drawing	30%
			Dimensioning	20%
			Neatness of drawing	10%
Formative	Minimum two drawing sheets from each module	40% of the total internal mark	Timely Completion	50%
			Appearance and organization of drawing sheets	50%
Attendance		20% of the total internal mark	Attendance and performance in drawing class (This is only for CIA. Marks for attendance will not be considered for attainment calculation of course outcome.)	

### 11.2.4 Assessment of Minor Project

**Minor Project** shall be assessed by CIA only. Assessment for Engineering and Technology programmes, shall be completed by a team of internal members comprising of two faculties, based on criteria below:

- a) For all Engineering and Technology programmes, except Computer Engineering and allied programmes

Sl. No.	CRITERIA	WEIGHTAGE
1	Applying concept of 5S as part of lean manufacturing in laboratories	10%
2	Involvement in maintenance of tools equipment. etc.	10%
3	Applying procedures for calibrating measuring and test instruments used in laboratory.	10%
4	Making use of skills acquired to solve problems of social significance or to simplifying day to day tasks - Open ended project	40%
5	Report	20%
6	Viva Voce	10%

b) For Computer Engineering and allied programmes as per GO (Rt) No. 1856/2022/HEdn. Thiruvananthapuram dated 19/12/2022

Sl. No.	CRITERIA	WEIGHTAGE
1	Problem identification and modeling	20%
2	Implementing technical solution and usage of tools	40%
3	Relevance of topic	10%
4	Report	10%
5	Role of individual and attendance	10%
6	Viva Voce	10%

c) For programmes in stream-2, the criteria shall be included with the syllabus of the course.

#### 11.2.5 Assessment of Major Project

CIA of Project work shall be computed, based on criteria below, using guidelines in the Handbook.

	<b>Tools</b>	<b>Marks</b>	<b>Guidelines</b>
<b>Summative</b>	Major project evaluation by the department.	40 % of the total internal mark	As per the format specified in the handbook.
<b>Formative</b>	Weekly activity report	40 % of the total internal mark	Weekly activity report in the form of diary to be maintained submitted to the concerned Faculty in charge. Duly signed diary has to be submitted to the department at the end of the Major project.
<b>Attendance &amp; Punctuality</b>		20% of the total internal mark	Attendance & Punctuality is mandatory as per the concerned organization's norms.

#### 11.2.6 Assessment of Seminar

Seminar shall be assessed by CIA only. The report and the presentation shall be evaluated by a team of internal members comprising of two senior faculty based on criteria below:

Sl. No.	Criteria evaluated	Weightage (%)
1	Relevance of Topic	10
2	Literature survey	10
3	Presentation (Presentation slides, delivery)	50
4	Interaction/ Discussion	10
5	Seminar Report	10
6	Attendance	10

#### 11.2.2 Assessment of Summer Internship I & II

Summer Internship I & II shall be assessed by ESE only, for a maximum marks of 75. The assessment shall be as per the guidelines included in the Handbook.

#### 11.2.8 Assessment of In plant training (For Diploma in Tool and Die only)

Assessment	<b>Tools</b>	<b>Marks</b>	<b>Guidelines</b>

<b>Summative</b>	Final In plant Training evaluation from the industry.	40 % of the total internal mark	As per the format specified in the Handbook.
<b>Formative</b>	Daily activity reports	10 % of the total internal mark	Daily activity reports in the form of diary (Record of day-to-day work done) to be submitted to the concerned supervisor of the industry. Duly signed diary has to submit to the department at the end of the training.
	Monthly activity reports	30 % of the total internal mark	Duly signed (authorized) monthly progress reports in the specified formats to be submitted to the concerned faculty of the institution.
<b>Attendance &amp; Punctuality</b>		20% of the total internal mark	Attendance & Punctuality is mandatory as per the concerned organizational norms.

### 11.3 End Semester Examination

#### 11.3.1 Assessment of Theory Courses

The theory courses shall be assessed through ESE conducted by the CTE/Institution. The duration of the examination shall be 3 hours unless otherwise specified in the scheme. Question paper shall be prepared based on all modules of the syllabus to assess whether the student has achieved the desired course outcomes.

#### 11.3.2 Pattern of question paper for theory courses

The entire syllabus for the theory course shall be divided into 4 Modules. The model question paper will form part of the curriculum. Questions shall be formulated to measure the Course outcomes, defined in the syllabus in order to calculate the Program outcome attainment. The questions should map with the 'Cognitive level' indicated in the syllabus. Normally, maximum marks for each course are 75.

There shall be two patterns of Question papers for the end semester examination. Pattern II shall be used for courses involving design and shall be specified in the syllabus. The rest of the courses shall use pattern I (one) for the end semester examination. Different patterns of question papers are permitted for courses involving

drawing. In such cases the modified pattern shall be specified along with the syllabus for the course.

#### Pattern I

- **PART A:** There shall be 9 questions of 1 mark each to be answered in one word or one sentence, with at least two questions from each module. All questions are compulsory.

$$9 \times 1 = 9 \text{ Marks}$$

- **PART B:** Part B shall have 10 questions of 3 marks each, with at least one question from each module. The candidate will have to attempt 8 questions out of 10.

$$8 \times 3 = 24 \text{ Marks}$$

- **PART C:** There shall be two group of questions from the same module. Each group of questions shall carry a total of 7 marks. There shall be six such sets. The candidate will have to attempt one group of questions from each such set.

$$6 \times 7 = 42 \text{ Marks}$$

Number of questions from each module shall depend on the hours allotted to each module in the respective syllabus.

#### Pattern II

- **PART A:** There shall be 7 questions of 3 marks each, with at least one question from each module. The candidate will have to attempt 5 questions out of 7.

$$3 \times 5 = 15 \text{ Marks}$$

- **PART B:** There shall be two groups of questions from each module. Each group of questions shall carry a total of 15 marks. The candidate will have to attempt one group of questions from each module.

$$4 \times 15 = 60 \text{ Marks}$$

#### 11.3.3 Assessment of Practical Courses

- i. The duration of the examination shall be 3 hours unless otherwise specified in the Programme scheme.
- ii. An internal examiner and external examiner shall conduct ESE of practical courses. The external examiner shall be appointed by the CTE.

Possession of bonafide record of the work done, duly certified by the faculty and HOD concerned is a pre requisite to attend the ESE of all Practical courses.

- iii. Award of marks in the End Semester practical examinations (except Project, Internship & Inplant training), shall be based on criteria as below:

SI No	Criteria Component	Weightage (%)
1	Fair record	10
2	Viva Voce	20
3	Procedure & Tabulation	30
4	Conduct of Experiment	20
5	Result & Inference	20

#### 11.3.4 Assessment of Major Project

Internal Examiner and External Examiner shall conduct ESE of Major Project based on criteria as below. The External examiner shall be appointed by CTE.

SI No.	Criteria evaluated	Weightage (%)
1	Development of prototype/Model	20
2	Usage of Modern Tool/Technology	10
3	Presentation (Presentation slides, delivery)	15
4	Innovativeness	5
5	Viva	15
6	Individual contribution	15
7	Group activity	10
8	Project report	10

### 11.3.5 Assessment of Internship I & II

Internship I & II shall be assessed by ESE only. The ESE shall be conducted by the concerned faculty. Award of marks for Internship for a maximum marks of 75, shall be based on criteria as follows:

<b>SI No</b>	<b>Criteria</b>	<b>Weightage (%)</b>
1	Presentation by the student at the end of the Internship	20%
2	Daily Activity Report	10%
3	Comprehensive report on Internship (As per the format given in Annexure 2)	30%
4	Relevant Internship Certificate from the concerned department	30%
5	Attendance and Punctuality	10%

### 11.3.6 Assessment of Inplant training (for Diploma in Tool & Die only)

<b>SI No</b>	<b>Criteria</b>	<b>Weightage (%)</b>
1	Seminar presentation at the end of the In Plant training	20%
2	Comprehensive report on In Plant Training (As per the format given in Annexure 2)	30%
3	In Plant Training Certificate from the concerned Industry	30%
4	Attendance and Punctuality	20%

## 12 Minimum requirements for award of Diploma

A student shall satisfy the following requirements to be entitled for the award of Diploma:

- i. A student shall acquire the credits as prescribed in the curriculum for each course and satisfy other criteria fixed by State Board of Technical Education.
- ii. A student shall acquire a minimum of 40% marks and earn a 'Pass' **in all Courses** including Audit courses prescribed in the Curriculum.
- iii. A student shall have completed all curriculum requirements including earning the required Activity points and completion of Internship I & II within the stipulated duration of the programme.
- iv. In case of the Diploma in Tool and Die programme, in addition to the above, a student shall have completed the In plant training as per curriculum.

## 13 Minimum requirements for earning credit

A candidate must secure a minimum of 40% marks in the ESE for all courses, a minimum of 40% marks for courses having CIA alone or ESE alone and combined 40% marks for internal & external assessment put together in theory and practical courses to secure the credit for the course.

A candidate must secure a Grading system

- i. The State Board of Technical Education shall award Letter Grade to students based on the marks secured by them in both internal assessment and end of semester Examinations for each course.
- ii. Each Letter Grade indicates a qualitative assessment of the student's performance and is associated with specified grade points. All candidates will be allotted grades according to the marks scored by them. The grading system based on the marks scored, are as follows:-

Sl. No	Range of Marks (%)	Grades	Description	Grade Points
1	90 and above	S	Outstanding	10
2	[80-90)	A	Excellent	9
3	[70-80)	B	Very Good	8
4	[60-70)	C	Good	7
5	[50-60)	D	Average	6
6	[40-50)	E	Satisfactory	5
7	Below 40	F	Unsatisfactory	0

Where [X-Y) means, X included and Y excluded.

- iii. The SBTE shall provide the course wise grade details of the students online. The Semester wise Grade Cards shall be issued on the requests of students. Such Semester wise grade cards will contain –
- The Code and Title of the Course.
  - Credits associated with, Grade and Grade point for each course.
  - Semester Grade Point Average.

Candidates who have completed the Diploma programme successfully will be eligible for Consolidated Grade Card. The Consolidated Grade Card will contain the Cumulative Grade Point Average attained by the candidate.

Cumulative grade point average (CGPA) CGPA is the weighted average of grade points obtained in all courses registered for the Diploma programme.

#### 14 Semester Grade Point Average (SGPA) & Cumulative Grade Point Average (CGPA)

SGPA is the weighted average of grade points obtained in all courses registered in a particular semester of the Diploma programme.

CGPA is the weighted average of grade points obtained in all courses registered for the Diploma programme.

$$\text{GPA} = \frac{\sum(C_i \times \text{GP}_i)}{\sum C_i}$$

Where, “ $C_i$ ” is the credit assigned for a course and “ $\text{GP}_i$ ” is the grade point earned for that course.

SGPA – GPA of all courses in a semester.

CGPA – GPA of all courses in the Diploma Programme.

such for representation. Whenever the GPA are to be used for determining the merit ranking in a group of students only the rounded off values shall be made use of.

Percentage of marks can be computed from GPA as:

$$\text{Percentage of marks} = \text{GPA} * 9.5\%$$

## 15 Classification

To be eligible for the award of Diploma for a particular programme a student should earn the requisite number of credits through successful completion of the courses of study.

There will be three classifications of successful candidates:

1. First Class with Distinction.

2. First Class.

3. Second Class.

- i. A candidate who has earned the requisite number of credits will be classified as First Class with Distinction based on the CGPA attained if, he / she secures the requisite credits and CGPA of 8 (eight) or above and fulfills the requirements for the award of Diploma, offered by the Board within 6 (six) consecutive semesters for Full time Diploma programme, 7 (seven) consecutive semesters for Part time Diploma programme and 4 (four) consecutive semesters for lateral entry scheme candidates.
- ii. A candidate who has earned the requisite number of credits will be classified as First Class based on the CGPA attained if, he/ she secures the requisite credits and CGPA of 6.5 or above and fulfills the requirements for the award of

Diploma within 8 (eight) consecutive semesters for Full time programme. 9 (nine) consecutive semesters for Part time Diploma programme and 6 (six) consecutive semesters for lateral entry scheme candidates.

iii. All other successful candidates shall be declared to be placed in Second Class.

iv. Provision for awarding rank in each programme will not be in Existence.

## 16 Activity points

17.1 A student shall earn 2 credits by actively involving in cocurricular, extracurricular and other activities as per the guidelines, in annexure-1, issued by the SBTE from time to time. On getting minimum 60 activity points the student earns two credits which shall not be counted for the calculation of CGPA but mandatory for the award of the Diploma. For the students admitted under lateral entry scheme the 2 credits shall be considered to be earned on getting 40 activity points. The students are required to keep a file containing documentary proof of activities done by him/her get it attested by the Faculty Advisor and submit a copy of the same to the Faculty advisor.

17.2 The Faculty advisor shall prepare the consolidated list of 'Activity points' earned by each candidate in that semester, get it verified by his/her HOD and 'Approved' by the Principal. These 'Activity points' are to be uploaded by the HOD at the end of each semester as per the guidelines in this regard in

Annexure-1.

## 17 Grace Mark

Grace marks (if any) earned by the student is restricted to a maximum of 10 marks for each course. In the case of Differently abled students, the grace mark will be awarded as per the Govt. Order in force

## 18 Advisory System - Academic Monitoring and Student Support

19.1 There shall be a Faculty Advisor for every batch. The Principal shall assign a faculty as the Faculty Advisor of a particular batch, based on the recommendation of the Head of Department.

- 19.2 The faculty advisor shall be responsible for collecting and maintaining all academic and non-academic documents including Course Files and end semester feedback. He shall submit the same to the HOD concerned at the end of the semester.
- 19.3 The Faculty Advisor shall be the point of contact for students and parents for all academic matters.
- 19.4 Faculty Advisor in consultation with the HOD shall arrange separate or combined meetings with faculty members, parents and students as and when required and discuss the academic progress of students under his advisory. The Faculty Advisor shall be the custodian of the minutes and action taken reports of such meetings.
- 19.5 The HOD shall ensure that the internal marks, activity points earned during the semester and eligibility of attendance are uploaded, as and when notified. The HOD shall keep in safe custody, such documents for future reference.
- 19.6 Head of the Departments shall conduct Advisory committee meetings to assess the progress of teaching and learning process as per curriculum and the attainment of outcomes. Regular, Formal and Informal feedback shall be collected by the Head of department and analysis of such feedback shall be presented by the HOD in such meetings.
- 19.7 The Advisory Committee meetings shall be reviewed in separate Advisory Committee meetings of each department convened by the Principal or in the ‘Academic Council’ meeting of the College.

## 19 Quality Assurance of Affiliated Institutions.

### a. Institution level:

Every affiliated Institution under SBTE, shall establish an IQAC for Quality assurance by focusing on improving the Academic and Administrative performance of the Institution. The Cell shall ensure, the effective implementation of outcome based education. The IQAC shall be responsible for the Institution level ‘Quality Audit’ and shall be conducted at least once in a semester. The IQAC shall function as per guidelines of AICTE.

## b. SBTE level

There shall be 'Quality Audit' in each affiliated Polytechnic college at stipulated intervals by SITTTR for SBTE in Online and/or direct visit mode. The 'Quality Audit' shall assess all aspects for enhancing Quality Assurance of Polytechnics, including Academic Auditing. The IQAC shall keep ready the Audit statements in the formats prescribed by the SBTE for each semester.

The auditing shall cover:-

- i. Functioning of the college encompassing students, faculty and college administration etc. The audit shall cover the quality criteria prescribed by NBA
- ii. Academic Auditing shall cover course delivery and adherence to the course plan of all courses, syllabus coverage, internal evaluation, mechanism for quality of question papers used for internal examinations etc. Student progress shall be measured by attainment calculations as defined by NBA.
- iii. The above details shall be documented and maintained as course file, for each course in the curriculum, by the faculty handling the particular course.

## 20 Academic Council

Every Polytechnic College shall establish an 'Academic Council' including Heads of department, Office Superintendent with the Principal as the convenor. The Academic Council shall :

- a. Review Department level meetings.
- b. Ensure that guidelines of Handbook are followed wherever necessary.
- c. Review implementation of OBE for its effectiveness.
- d. Formulate the conduct of Institution level ESE in a fair and transparent manner:
  - i. The date of Institution level ESE shall be selected to be a date after the closing of the particular semester and the date(s) shall be appropriately published.

- ii. The Principal shall identify at least two appropriate faculty members for the preparation of a minimum of 2 sets of question papers (in sealed covers) for all courses with Institution level ESE, by ensuring secrecy.
  - iii. Each question paper shall cover all the course outcomes defined in the syllabus.
  - iv. The Principal shall randomly pick one of the question papers (in the sealed cover), on the day of the Institution level ESE and entrust the Examination Monitoring cell convenor for the conduct of the exam.
  - v. The examination monitoring cell convenor shall make appropriate arrangements for valuation of answer scripts as per directions of the Principal. He/she shall ensure that the marks are submitted as per directions of CTE.
  - vi. All documents related to the ESE including answer scripts shall be kept ready for scrutiny by the SBTE
- e. Ensure that the Open Elective Course in the 6th semester is offered in a fair and transparent manner:
- i. Before the start of the 6th semester, each year, every department shall publish the Open Electives offered in that particular semester.
  - ii. Based on number of students registered for the 6th semester in all programmes in the College, in a particular year, divide the students into as many batches as the number of programmes in the College. The batches maybe formed based on the choice of the Open Elective of the students.
  - iii. The number of students in each batch maybe maintained approximately the same.
  - iv. The Principal shall ensure that every programme in the College, conducts atleast one Open Elective in each year. The process followed in the Polytechnic College shall be documented for scrutiny by SBTE.

## 21 Examination Monitoring Cell

The Principal shall constitute an Examination Monitoring Cell at the Polytechnic for supervising the examination related activities. This cell shall have a senior faculty

as convener and a minimum of three members, of which one shall be a woman. The duties and responsibilities of the Examination Monitoring Cell shall be:

- i. To officiate as the examination squad to keep a vigil on all End Semester Examinations. If any malpractice is observed/reported by the invigilator, the Principal shall be appraised of the same with a report. The Principal shall forward such complaints to the CTE.
- ii. To receive any complaints from the students regarding issues like out of syllabus questions, printing mistakes, insufficient data etc in the ESE of Theory and Practical courses. The cell shall make a preliminary investigation of the complaint and if necessary forward it to the CTE through the Principal with specific comments.
- iii. To receive any complaints from students regarding internal examinations, make preliminary enquiry of such incidents and submit report to Principal for necessary action.
- iv. To conduct the examinations, arrange valuation of answer scripts and ensure submission of marks of Institution level ESE as per directions of Principal.

## 22 Advisory Committee

Principal of the Polytechnic College shall form Advisory committee for each department at the commencement of the academic year. The Advisory Committee shall consist of the Head of Department, faculty advisors and three student representatives (one of whom shall be a woman) from each class and any other faculty or supporting staff assigned to assist Faculty Advisor for monitoring and supporting all diverse activities of a particular group/batch of students and to interact with the parents. Student Counsellor (as per AICTE) shall be included in such meetings, whenever possible.

The committee shall meet and deliberate at least twice in a semester. It shall be the responsibility of the Head of Department to convene these meetings. The decisions of the Advisory Committee shall be communicated to the Principal and recorded in a register for further reference.

The Advisory committee shall,

- i. Review periodically, the progress and conduct of the students in the class.
- ii. Discuss any problems related to the courses of the semester concerned and ensure coverage of syllabus.
- iii. Identify weak students in the class and suggest remedial measures for supporting him/her. Identify bright students and arrange for encouraging them.
- iv. Review the effective implementation of the outcome based curriculum and ensure that the guidelines as per Handbook are being followed. R
- v. Discuss any other academic issues.

### 23 Anti - Ragging Cell

The Principal shall form an Anti - Ragging Cell at the commencement of each academic year. The cell shall function as per the orders and guidelines issued by the Government/AICTE in this regard.

Any other Committee/Cell mandated by the Govt/AICTE for the smooth conduct of the Institution shall be constituted by the Principal.

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