Assessment Manual

For

Micro Projects / Industrial Training

_____ Engineering Programme

(I Scheme Curriculum)

Maharashtra State
Board of Technical Education, Mumbai
(Autonomous) (ISO-9001-2008) (ISO/IEC 27001:2013)

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Preface

The primary focus of any engineering laboratory/ field work in the technical education system is to develop the much needed industry relevant competencies and skills. With this in view, MSBTE embarked on this innovative 'I' Scheme curricula for engineering diploma programmes with outcome-base education (OBE) as the focus and accordingly, relatively large amount of time is allotted for the practical work and micro project. This displays the great importance of micro project work making each teacher; instructor and student to realize that every minute of the laboratory time need to be effectively utilized to develop these outcomes, rather than doing other mundane activities. Therefore, for the successful implementation of this outcome-based curriculum, every course has been designed to serve as a ***'vehicle'*** to develop this industry identified competency in every student. The practical skills are difficult to develop through 'chalk and duster' activity in the classroom situation. Accordingly, the 'I' scheme micro project assessment manual development team designed the micro project outlines***focus*** on the ***outcomes***, rather than the traditional age old practice of conducting practicals to 'verify the theory' (which may become a byproduct along the way).

This micro project assessment manual is designed to help all stakeholders, especially the students, teachers and instructors to develop in the student the pre-determined outcomes. It is expected from each student that at the beginning of term for all related courses s/he must finalized team members and title of micro project under the guidance of course faculty Every micro project in this manual begins by identifying the competency, industry relevant skills, course outcomes and practical outcomes which serve as a key focal point for doing the micro project. The students will then become aware about the skills they will achieve through procedure and end product in solving real-world problems in their professional life.

This manual also provides guidelines to teachers and instructors to effectively facilitate student-centered lab activities through each micro project by arranging and managing necessary resources in order that the students follow the procedures and precautions systematically ensuring the achievement of outcomes in the students.

The micro project assessment manual development team wishes to thank NITTTR, Bhopal who work as consultant in the development of curriculum re-design project and also acknowledge the contribution of individual course experts who have been involved in laboratory manual as well as curriculum development (I scheme) directly or indirectly.

Although all care has been taken to check for mistakes in this micro projects assesment manual, yet it is impossible to claim perfection especially as this is the first edition. Any such errors and suggestions for improvement can be brought to our notice and are highly welcome.

Certificate of Completion

of Micro-Project Assessment at the end of the Diploma Programme

(by respective Head of the Department & Head of the Institute)

This is to certify that Mr./Ms……..with Enrollment No…… has successfully completed ……. Micro-projects as in the enclosed 'Portfolio' during his/her tenure of completing the Diploma programme in ……from ……. institute with institute code……..

Head of the Department **Seal** **Head of the Institute**

Certificate of Completion

Of Industrial – Training Assessment at the end of the 5th semester

(by respective Head of the Institute & hear of the Department)

This is to certify that Mr/Ms……with Enrollment No. ……Has successfully completed Industrial Training in ……..daily ……. To ……. his / her tenure of completing the Diploma Program in ……from …… Institute Code…….

Head of the Department **Seal** **Head of the Institute**

Summary Sheet of the Micro Projects Completed During the 3-year Engineering Diploma Programme

S. No.	Name and code of course	Title of the Micro Project	Name of Guide	Signature of Guide
Semester – I				
1				
2				
3				
4				
5				
6				
Semester – II				
7				
8				
9				
10				
11				
12				

Semester – III				
13				
14				
15				
16				
17				
18				
Semester – IV				
19				
20				
21				
22				
23				
24				

Semester – V				
25				
26				
27				
28				
29				
30				
Semester – VI				
31				
32				
33				
34				
35				
36				

GUIDELINE DOCUMENT FOR MICRO-PROJECTS OF 'I' - SCHEME

1.0 INTRODUCTION

Project work is the activity that is intended to integrate all the domains of learning i.e. cognitive, psychomotor and affective domains wherever applicable, the hence it is very important from the teacher and student point of view. Any project work is *not a research*, but an experience of doing some complex work by students on their own, or 'work-based learning' Project can be of micro, mini, minor and major levels depending on at what stage of learning (from first semester to the last semester) it is incorporated; but all these categories will have the same characteristics. Only the amount of effort put in and time required will be changing. Therefore, the project work is defined as *'A purposeful student activity planned, designed and performed by a student or group of students to solve the identified problems (or complete a relatively complex task) which requires them to integrate the various types of skills acquired over a period to help them to accomplish higher level of cognitive and affective domain outcomes and sometimes the psychomotor domain outcomes as well'. (Earnest, Joshua and S. K. Gupta).* This definition means that the project work leads to the integration of knowledge, skills and attitudes of the three domains of learning acquired over a period of time. It would field-based, classroom-based, lab-based, internet based, library-based or home-based. Therefore, for a micro-project also, which is related to a single course, it is not purely laboratory or field based. It is decided by pre-defined competency and course outcomes of the particular course. It could of one particular type or a combination of different types, but the efforts by the student need to be of 16 weeks duration during the whole semester i.e. about 1 hour per week outside the classroom, in the home, in the library, laboratory, workshop or field and is intended to integrate the three domains of learning, wherever applicable. Micro-project is also intended to develop the so called *'soft skills'* in the student. Therefore the choice of the micro-project is also crucial.

2.0 SALIENT FEATURES OF MICRO-PROJECT

Every micro-project is basically intended to integrate more than course outcome i.e .more than one unit of the theory and the related practicals stated in the course along with the affective domain skills mentioned over there. Since it is a micro-project for a single course, it is not intended to be very complex and report is not expected to be voluminous. But, every student is expected to devout about 16 hours work for a micro-project in a group or individually duringthe whole semester. The micro-project report is the end product which need to be given about 25% weightage. The *'process'* is the key which the teacher has to monitor regularly through seminars and other activities typically every fortnight online or otherwise, so that the skills are gradually built up in the students over the period of time.

One of the main purpose of micro-project is to develop the ability to work in real life settings individually or collectively as the situation may be**.** Following are some of the salient features of the micro-project.

a) Micro-projects are introduced in each course to take advantage of project method of learning.
b) The course teacher would be the guide for all groups of his/her class for that course.
c) Micro-project is a small project which requires about 16 hours of work by students in whole semester. (i.e. about one hour each week)
d) Students can choose micro-projects other than the sample list after consultation with their teacher.

e) Micro-project would be given to students as a group work. (Group size should not be more than 6 students).

3.0 ABILITIES INTENDED TO BE DEVELOPED THROUGH MICRO-PROJECT

Following are the major abilities that are expected to be developed in the student through the work of 25 -30Micro-projectsintroduced in this outcome-based curriculum not through one course alone, but during the entire the diploma programme of 3 years duration. It is not necessary that every micro-project should develop all the following abilities. *However, some of the abilities mentioned below may be common in many of the micro-projects.*

a) Show the attitude of enquiry.
b) Identify the problems in the area related to their branch of the of their diploma programme.
c) Identify the information suggesting the cause of the problem and possible solutions.
d) Prepare project proposals before starting the project.
e) Derive different possible solutions creatively.
f) Assess the financial implication and feasibility of different solutions based on preliminary studies.
g) Collect relevant data from different sources (books/internet/market/suppliers/experts and others through surveys/interviews).
h) Analyse the collected data and to generate useful information from it.
i) Present generated information visually in form of appropriate charts/graphs.
j) Prepare required drawings and detailed plan for execution of the work.
k) Work persistently to achieve the targets.
l) Attempts alternative solutions/revise aims/execute alternative plans, in case of failures.
m) Use relevant machines and equipment/instruments safely.
n) Develop the prototype/model/ of the desired equipment/instrument/machine part and such others.
o) Show concern for material and cost reduction.
p) Incorporate safety features in products.
q) Work independently for the responsibility undertaken.
r) Participate effectively in group work.
s) Ask for help from others including guide, when required.
t) Prepare the technical reports.
u) Prepare presentations.
v) Present findings/features of the projects in seminars.
w) Confidently, answer the questions asked about the project.
x) Acknowledge the help rendered by others in success of the project.

It is obvious from the above, that it is not necessary to have very innovative idea or to produce something new with the help of micro-project. The main purpose is to develop above skills/attitudes in the students. ***Thus micro-projects should not be very complex or research oriented, they should be such that students can complete it on their own without much help of teacher or from outside the institute.***

4.0 REPORT FOR THE MICRO-PROJECT

The micro-projectreport has two parts (format is attached as Annexure I). First part is 'Project Proposal' about two pages in 12 point calibri font of 1.2 spacing with margins of 2.5 centimeters, top, bottom, right and left in the format given in the Annexure- I. This is related to the planning, which should be submitted by the end of fourth week of the semester. The purpose of this part is to teach the student to plan and also to ensure that students finalise their title and start working by the fourth week.

The second part is the micro-project report (Annexure II) which is to be submitted after the completion of the projectprepared inblack and white(no colour printing) of 8 to 15of A4 size pages depending upon nature of the project (excluding the cover page and initial pages) written in preferably in 12 point calibri font of 1.2 spacing with margins of 2.5 centimeters, top, bottom, right and left of each page.

The sample evaluation of the micro-project has to be undertaken throughout the semester once in a fortnight , section-by-section of the Report format in accordance with Annexure IV to ensure the quality of the ongoing micro-project work to attain the desired COs aimed towards the development of the competency.

5.0 COST OF MICRO-PROJECT

As far as possible, no cost need to be incurred by the student for the micro-project. Since students are supposed to do one micro-project in every course, in case it becomes necessary to incurred expenditure of Micro-Project the total cost should not exceed Rs.1000 per project.

Teacher should ensure that the Micro-Project should not become financial burden on students

6.0 ASSESSMENT OF MICRO-PROJECT

Purpose of Micro-project is to not only to give the marks but to give the qualitative feedback to the students and hence rubrics would be used for assessment of the Micro-project. Rubrics are given in Annexure II. Qualitative feedback on project work would be given by teacher by ticking appropriate cells in the rubrics shown in the teacher evaluation sheet. Teachers should make it very clear to the students that marks for the project would be awarded based on the efforts put in by the students and not based on the project report only. **Students who have worked on their own and tried their best but are not able to complete the project should get more marks in comparison to students who got their work completed with the help of others.**Photocopy of evaluated sheet has to attached by every student with his/her project report.

The following assessment methodology of the micro-project

a) For each Micro-project 10 Marks is earmarked for progressive Assessment.
b) A Micro-Project Evaluation format is given in Annexure III.
c) In this sheet assessor would also mention the Course Outcomes, Practical Outcomes, Unit Outcomes and Affective Domain Outcomes achieved by the project.
d) Out of 10 Marks 6 marks would be based on the project work. All group members would receive same marks out of 6 Marks
e) Remaining 4 marks would be based on individual contribution to be decided by teacher by taking viva - voce.

f) The teacher needs fill only one teacher evaluation sheet for each group and then make multiple copies of the filled teacher evaluation sheet according to the number of students in that group. Then the teacher can give marks out of 4 for after the presentation/viva of each student.

7.0 MICRO-PROJECTS PORTFOLIO:

a) It is a collection of all the micro-projects completed by the student in the whole diploma programme
b) Student would go on filling the reports of micro-projects in a portfolio (a kind of folder) along with the 'Teacher Evaluation Sheet' of that project.
c) In inner page of the initial pages of compiled portfolio there will be a summary sheet of all the micro-projects done by a student through all the three year diploma programme.
d) Students can use this portfolio in job interviews to show proudly about 30 micro-proj*ects completed by them in their diploma programme.*

Annexure –I

Part – A Micro-Project Proposal

(Format for Micro-Project Proposal A about 2-3 pages)

Title of Micro-Project

1.0 Aims/Benefits of the Micro-Project (minimum 30-50 words)

2.0 Course Outcomes Addressed

a) ……

b) ……

c) ……

3.0 Proposed Methodology

(Procedure in brief that will be followed to do the micro-project) in about 100 to 200 words)**.**

5.0 Action Plan (Sequence and time required for major activity)

S. No.	Details of activity	Planned Start date	Planned Finish date	Name of Responsible Team Members
1				
2				

6.0 Resources Required (major resources such as raw material, some machining facility, software etc.)

S. No.	Name of Resource/material	Specifications	Qty	Remarks
1				
2				

Names of Team Members with Roll Nos.

1. ……
2. ……
3. ……
4. ……
5. ……
6. ……

****

Annexure – II

Part – B Micro-Project Report

(Outcomes after Execution) Format for Micro-Project Report (Minimum 6 pages)

Title of Micro-Project

1.0 Rationale

(Importance of the project, in about 30 to 50 words. This is a modified version of the earlier one written after the work)

2.0 Aims/Benefits of the Micro-Project

3.0 Course Outcomes Addressed (Add to the earlier list if more COs are addressed)

a) .....

b) .....

4.0 Literature Review

5.0 Actual Methodology Followed.

Write step wise the work was done, including which team member did what work and how the data was analysed (if any)**.**

6.0 Actual Resources Used (Mention the actual resources used)**.**

S. No.	Name of Resource/material	Specifications	Qty	Remarks
1				
2				

7.0 Outputs of the Micro-Projects

(Drawings of the prototype, drawings of survey, presentation of collected data, findings etc.)

8.0 Skill Developed / Learning outcome of this Micro-Project

9.0 Applications of this Micro-Project

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Annexure – III

Suggested Rubric for Assessment of Micro Project

*(The rubric given below may be modified depending on the type of micro-project. Consider the **SIX most relevant** characteristics for evaluating the microproject)*

(Allot the marks in the appropriate cell given below each criteria)

S. No.	Characteristic to be assessed	Poor (Marks 1-3)	Average (Marks 4 - 5)	Good (Marks 6 - 8)	Excellent (Marks 9- 10)
1	**Relevance to the course**	Related to very few LOs	Related to some Los	Addressed at-least one CO	Addressed more than one CO
2	**Literature Review/information collection**	Not more than two sources (primary and secondary), very old reference	At-least 5 relevant sources, at least 2 latest	At –least 7 relevant sources, most latest	About 10 relevant sources, most latest
3	**Completion of the Target as per project proposal**	Completed less than 50%	Completed 50 to 60%	Completed 60 to 80%	Completed more than 80 %
4	**Analysis of Data and representation**	Sample Size small, data neither organized nor presented well	Sufficient and appropriate sample, enough data generated but not organized and not presented well. No or poor inferences drawn	Sufficient and appropriate sample, enough data generated which is organized and presented well but poor inferences drawn	Enough data collected by sufficient and appropriate sample size. Proper inferences drawn by organising and presenting data through tables, charts and graphs.
5	**Quality of Prototype/Model**	Incomplete fabrication/assembly.	Just assembled/fabricated and parts are not functioning well. Not in proper shape, dimensions beyond tolerance limit. Appearance/finish is shabby.	Well assembled/fabricated with proper functioning parts. In proper shape, within tolerance dimensions and good finish/appearance. But no creativity in design and use of material	Well assembled/fabricated with proper functioning parts. In proper shape, within tolerance dimensions and good finish/appearance. Creativity in design and use of material
6	**Report Preparation**	Very short, poor quality sketches, Details about methods,	Nearly sufficient and correct details about methods, material,	Detailed, correct and clear description of methods, materials,	Very detailed, correct, clear description of methods, materials,

S. No.	Characteristic to be assessed	Poor (Marks 1-3)	Average (Marks 4 - 5)	Good (Marks 6 - 8)	Excellent (Marks 9- 10)
		material, precaution and conclusions omitted, some details are wrong	precautions and conclusion, but clarity is not there in presentation. But not enough graphic description.	precautions and Conclusions. Sufficient Graphic Description.	precautions and conclusions. Enough tables, charts and sketches
7	**Presentation of the Micro project**	Major information is not included, information is not well organized .	Includes major information but not well organized and not presented well	Includes major information and well organized but not presented well	Well organized, includes major information ,well presented
8	**Defense**	Could not reply to considerable number of question.	Replied to considerable number of questions but not very properly	Replied properly to considerable number of question.	Replied most of the questions properly
	Total Marks				

Teacher Evaluation Sheet

Name of Student: ..... **Enrollment No.**.....
Name of Programme..... **Semester:** .....
Course Title ..... **Code:**.....

Title of the Micro-Project: .....

Course Outcomes Achieved

.....
.....
.....

Evaluation as per Suggested Rubric for Assessment of Micro Project

Sr. No.	Characteristic to be assessed	Poor (Marks 1 - 3)	Average (Marks 4 - 5)	Good (Marks 6 - 8)	Excellent (Marks 9- 10)
1	Relevance to the course				
2	Literature Review/information collection				
3	Literature Review/information collection				
4	Analysis of Data and representation				
5	Completion of the Target as per project proposal				
6	Report Preparation				
7	Presentation of the Micro project				
8	Presentation of the Micro project				

MIcro-Project Evaluation Sheet

Process and Product Assessment (6 marks) *(Note: The total marks taken from the above Rubrics is to be converted in proportion of '6' marks)*	Individual Presentation/Viva (4 marks)	Total Marks 10

Comments/Suggestions about team work/leadership/inter-personal communication (if any)

……

…….

……

…….

Name and designation of the Teacher…….

Dated Signature……

Assessment Manual

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MAHARASHTRA STATE BOARD OF TECHNICAL EDUCATION (MSBTE)

"I" Scheme Curriculum (Launched in 2017)

6 -Week Industrial Training **Common to all programmes**

Name of Course: **Industrial Training *(6 weeks duration)***

1. RATIONALE

Industrial training course is introduced to all diploma programmes with the aim to imbibe the industry culture in the students before they enter into world of work. By exposing and interacting with the real life industrial setting, student will appreciate and understand the actual working of an industry, best practices adopted in industry and other requirements in the industry. The industrial needs such as the soft skills, life skills and hands-on practices is intended to be inculcated in the students through this training. This short association with the industry will be instrumental in orienting the students in transforming them to be industry ready after completion of diploma programme.

2. COMPETENCY

This course is intended to develop the following competencies:

a) **Soft Skills i.e. Communication, Presentation and others.**
b) **Life Skills i.e. Time management, Safety, Innovation, Entrepreneurship, Team building and others**
c) **Hands-on Practices i.e. Shop floor Implementation and Quality Assurance aspects.**

3. COURSE OUTCOMES

The industrial training is intended to acquire the competencies as mentioned above to supplement those attained through several courses up to fourth semester of the program:

a) Communicate effectively (verbal as well as written) the execute work.
b) Prepare the industry report of the executed work.
c) Exercise time management and safety in the work environment.
d) Work in teams for successful completion of projects assuring quality.

4. TEACHING & EXAMINATION SCHEME

Teaching scheme (In hours)			Total Credits (L+ T+ P)	Examination Scheme				
				Theory Marks		Practical Marks		Total marks
L	T	P		ESE	PA	ESE	PA	
--	--	6	6	--	--	75#	75#	150

Note: Both ESE and PA part of assessment will be carried out by institute faculty and industry training supervisor as explained in table no. 2, 3 and 4

5. GENERAL GUIDELINES FOR INDUSTRIAL TRAINING

The Industries/Organizations can be Government/Public limited/or Private family enterprises.

a) **Duration of Industrial Training:** Between 4th and 5th semester (Summer Vacation).

b) **Duration of the training:** Six weeks

c) **Training Area:** Students should be trained in large and medium scale Industry / Organization. However, despite the best efforts by the institute, if large and medium scale Industry / Organization are not available to all students then, students can also be placed in small scale Industry / Organization.

For ***Civil engineering,*** it can be public works department, irrigation department, public health engineering, municipal corporations, town and country planning, highway and roads authorities, railways, large and medium scale civil contractors, rural engineering departments, environment corporations, large and medium scale private construction companies, mining companies.

For ***Mechanical Engineering,*** it can be manufacturing, fabrication, foundry or processing industry which may include compressors, boilers, engines, heat exchangers, air conditioning and refrigeration plants, conveyors etc are either manufactured or used. Power plants, Railways, process plants, ordinance factories, textile factories, automobile manufacturers or major automobile workshops.

For ***Electrical engineering,*** it can be electricity transmission and distribution companies, power generating stations, sub stations, railways, industries manufacturing electrical products which may include industry where large motors/transformers etc. are used, process plants, electrical contractors.

For ***Electronics engineering,*** it can be telecommunication companies, post and telegraph department, manufacturer of telecommunication product, manufacturers of control equipments, manufacturer of CNC machines, any manufacturing industry where electronic controls are used either in production process or in its products, computer hardware manufacturers, signal divisions of railways, etc.

For ***Computer and IT*** industries, it can be any software developers, cyber security companies, web page developers, networking companies, data base management companies, telecommunication companies or IT division of any other industries/finance/retail companies or organisations where software are used and maintained for various applications.

6. ROLE OF PARENT DEPARTMENT OF THE INSTITUTE

Sl. No.	Activity	Schedule
1	Collecting information about Industry / Organization available for training along with capacity (Format - 1)	Before completion of 3rd semester
2	Student and mentor allocation as per the slots available for in-plant training (Desirable mentor- student ratio is 1:15)	Before commencement of 4th semester
3	Communication with Industry / Organization available for training along with capacity and its confirmation	Before first Unit Test of the 4th semester
4	Obtaining consent letter from parents / guardian	Before second Unit Test

Sl. No.	Activity	Schedule
	(Format - 2)	of the 4th semester
5	Student enrollment for In-plant training (Format - 3)	Before commencement of 4th semester examination
6	Issue letter to the Industry / Organization for the training along with details of students and mentors. (Format - 4)	During 4th semester examination
7	Mentors to carry out progressive assessment of the students during the in-plant training (Format - 5)	Each week of training
8	End of training assessment by mentor along with Industry / Organization expert as external examiner(Format - 6)	Before 5th semester ESE

Suggestions

a) Departments can take help of alumni or present students (if they or their parents or relatives have some contact in different industries) for securing placement.

b) The students would normally be placed as per their choices, in case of more demand for a particular Industry / Organisation students would be allocated place based on their relative merit. However, if some students have arranged training placement in some companies with the help of their parents/relatives etc. then they will be given preference for placement in those companies.

c) Principal/HOD/Faculty should address students about industrial safety norms, rules and discipline to be maintained in the Industry / Organisation during the training before relieving students for training.

d) The faculty member during the visit to Industry / Organisation will check the progress of the student in the training, his/ her attendance, discipline and project report preparation.

7. EXPECTATIONS FROM INDUSTRY

Helping institute in developing the following competencies among students

a) **Soft Skills i.e. Communication, Presentation and others.**
b) **Life Skills i.e. Time management, Safety, Innovation, Entrepreneurship, Team building and others**
c) **Hands-on Practices i.e. Shop floor Implementation and Quality Assurance aspects.**

8. ROLES AND RESPONSIBILITIES OF THE STUDENTS

Following should be informed to students in the letter deputing them for the training, an undertaking for this should also be taken from them

a) Students would interact with the mentor to suggest choices for suitable Industry / Organization. If students have any contact in Industry / Organization (through their parents, relatives or friends) then same may be utilized for securing placement for themselves and their peers.

b) Students have to fill the forms duly signed by authorities along with training letter and submit it to training officer in the industry on the first day of training. Student should also carry with him/her the Identity card issued by institute during training period.

c) He/she will have to get all the necessary information from the training officer regarding schedule of the training, rules and regulations of the Industry / Organization and safety procedures to be followed. Student is expected to observe these rules, regulations, procedures.
d) Students should know that if they break any rule of industry or do not follow the discipline then industry can terminate the training and sent back the students.
e) It is the responsibility of the student to collect information from Industry / Organization about manufacturing processes / testing and quality assurance methods/specifications of machines and raw materials/maintenance procedures/ production planning/organizational structure etc.
f) During the training period students have to keep record of all the useful information in Log book
g) Maintain the weekly diary as provided and get it signed from mentor as well as Industry / Organization training in-charge.
h) In case they face any major problem in industry such as an accident or any disciplinary issue then they should immediately report the same to the institute.
i) Prepare final report about the training for submitting to the department at the time of presentation and viva-voce and get it signed from mentor as well as Industry / Organization training in-charge.

9. FORMAT FOR TRAINING REPORT

Following is the suggestive format for the training report, actual format may differ slightly depending upon the nature of Industry / Organisation. The training report may contain the following

- Title page
- Certificate
- Abstract
- Acknowledgement
- Content Page

Chapter 1. Organizational structure of Industry / Organisation and General Lay Out
Chapter 2. Introduction of Industry / Organisation (Type of products and services, history, turn over and number of employees etc.)
Chapter 3. Types of major equipment/instruments/ machines used in industry with their specification, approximate cost and specific use and their routine maintenance.
Chapter 4. Manufacturing Processes along with production planning and control methods.
Chapter 5. Testing of raw materials, components and finished products along with quality assurance procedures.
Chapter 6. Major material handling product (lifts, cranes, slings, pulleys, jacks, conveyor belts etc.) and material handling procedures.
Chapter 7. Safety procedures followed and safety gear used (includes Preventive maintenance schedule and breakdown maintenance procedures).
Chapter 8. Particulars of Practical Experiences in Industry / Organisation if any in Production/ Assembly/ Testing/Maintenance.
Chapter 9. Short report/description of the project (if any done during the training)
Chapter 10. Special/challenging experiences encountered during training if any (may include students liking & disliking of work places)

References /Bibliography

10. SUGGESTED LEARNING STRATEGIES

Students should visit the website of the industry where they are undergoing training to collect information about products, processes, capacity, number of employees, turnover etc. They should also refer the handbooks of the major machines and operation, testing, quality control and testing manuals used in the industry. Students may also visit websites related to other industries wherein similar products are being manufactured as their learning resource.

11. TENTATIVE WEEK-WISE SCHEDULE OF INDUSTRIAL TRAINING

The industrial training is a common course to all programmes; therefore the industry / Organisation selection will depend upon the nature of programme and its related industry. The training activity may vary according to nature and size of Industry / Organisation. The following table details suggestive schedule for industrial training for all programmes.

Table - 2 Detail week schedule and Marks distribution

S. No.	Week No.	Details of activities to be completed during Industrial training	Marks distribution/ week for PA
1	Week No. 1	Induction to industry and its departments	05
2	Week No. 2	Study of layout and specifications of major machines, equipment and raw materials / components / software used.	05
3	Week No. 3	Study of setup and processes/execute project.	25
4	Week No. 4	Study of QA/QC procedures.	10
5	Week No. 5	Study safety and maintenance procedure in an industry/organization	05
6	Week No. 6	Report Writing	00
PA marks to be given by industry supervisor			25
PA marks to be given by polytechnic faculty based on report			25
		Total PA marks for training	**75**

Table - 3 ASSESSMENT SCHEME FOR INDUSTRIAL TRAINING

Training duration	PROGRESSIVE ASSESSMENT (*Weekly report of all 6 week and attendance)*		END SEMESTER ASSESSMENT (*Seminar and Oral)*		Total marks	
Six weeks	Max. marks	Min. marks	Max. marks	Min. marks	Max. marks	Min. marks
	#75	--	75**	30	150	60

**assessed by external examiner based on report (25 Marks), presentation (25 Marks) and Viva-Voce (25 Marks)

Table - 4 Distribution of End-Semester-Examination (ESE) marks of Industrial Training

Marks for Industrial Training Report	Marks for Seminar/ Presentation	Marks for Oral/Viva-voce	Total ESE marls
25	25	25	75

Format1 : Collecting Information about Industry/Organisation available for training alongwith capacity

1) Name of the industry/organisation:
2) Address/communication details(incl email):
3) Contact person details:
   a) Name:
   b) Designation:
   c) Email
   d) Contact number/s:

4) Type:
   Govt / PSU / Pvt /
   Large scale / Medium scale / Small scale …..

5) Products/services offered by industry:

6) a) Whether willing to offer Industrial training facility during May/ June for Diploma in Engineering students: Yes / No.
   b) If yes, whether you offer 6 weeks training : YES/NO
   c) Internship capacity possible:

Programme	Civil Engg	Mechanical Engg	Electrical Engg	……	Total
Male					
Female					
Total					

7) Whether accommodation available for interns Yes / No.
   If yes capacity:_____

8) Whether internship is charged or free:
   If charged please specify amount per candidate: _____

Signature of responsible person:

Format2 : Obtaining Consent Letter from parents/guardians

(Undertaking from Parents)

To,

The Principal,

_____,

Subject: Consent for Industrial Training.

Sir/Madam,

I am fully aware that -

i) **My ward studying in _____ semester at your _____ institute has to undergo six weeks of Industrial training for partial fulfillment towards completion of Diploma in _____ Engineering.**

ii) **For this fulfillment he/she has been deputed at _____ industry, located at _____ for internship of ____ weeks for the period from _____ to _____ .**

With respect to above I give my full consent for my ward to travel to and from the mentioned industry. Further I undertake that –

a) **My ward will undergo the training at his/her own cost and risk during training and/or stay.**
b) **My ward will be entirely under the discipline of the organization where he/she will be placed and will abide by the rules and regulations in face of the said organization.**
c) **My ward is NOT entitled to any leave during training period.**
d) **My ward will submit regularly a prescribed weekly diary ,duly filled and countersigned by the training supervisor of the organization to the mentor faculty of the polytechnic.**

I have explained the contents of the letter to my ward who has also promised to adhere strictly to the requirements. I assure that my ward will be properly instructed to take his own care to avoid any accidents/injuries in the industry. In case of any accident neither industry nor the institute will be held responsible.

Signature :
Name : _____
Address :_____
_____
Phone Number:_____

Format 4: Issue Letter to the Industry/Organisation for the training alongwith details of students and mentors

To,

The HR Manager,

_____

Subject: Placement for Industrial training of ___ weeks in your organization….

Reference: Your consent letter no: ….

Sir,

With reference to the above we are honored to place the following students from this institute for Industrial training in your esteemed organization as per the arrangement arrived at.

Diploma programme in _____ Engg.

Sr. no.	Enrolment no.	Name:	Mentor

Diploma programme in _____ Engg.

Sr. no.	Enrolment no.	Name:	Mentor

Kindly do the needful and oblige.
Thanking you in anticipation

Yours sincerely,

(Principal)

Name of the Institute:
with Seal

PA of Industrial training

Academic year : 20 -20

Name of the industry:

Sr. No	Enrolment Number	Name of student	Marks (5 marks for each week)						PA Marks by Industry Supervisor	PA based on Report by mentor faculty	Total
			Week 1	Week 2	Week 3	Week 4	Week 5	**Total (A)**	**Out of 25 (B)**	**Out of 25 (C)**	**Out of 75 (A)+(B)+(C)**

Marks for PA are to be awarded out of 5 for each week considering the level of completeness of activity observed, from the daily diary maintained and feedback from industry supervisor.

Name of mentor:

Signature of mentor