Government Polytechnic, Mumbai

(Academically Autonomous Institute, Government of Maharashtra)

Name of the Programme : Diploma In Rubber Technology (Sandwich Pattern)

Learning and Assessment Scheme (P23)		**With Effect from Academic Year: 2023-24**
Duration Of Programme: 6 Semester		**Duration: 16 WEEKS**
Term / Semester – Second Year Exit		**Scheme: (P23)**

Sr. No	Course Title	Course Type	Course Code	Total IKS Hrs for Sem	Learning Scheme					Credits	Paper Duration (hrs.)	Assessment Scheme													
					Actual Contact Hrs./Week			Self-Learning (Term Work +Assignment)	Notional Learning Hrs/Week			Theory					Based on LL & TL Practical					Based on Self Learning		Total Marks
												FA- TH		SA-TH	Total		FA-PR		SA-PR			SLA		
					CL	TL	LL					T1	T2	Max	Max	Min	Max	Min	Max PR	Max OR	Min	Max	Min	
Skill oriented courses identified from 2nd year completed by students																									
1	Latex Technology	SEC	RT23301	0	5	-	2	1	8	4	2.5	20	20	60	100	40	25	10	-	-	-	25	10	150
2	Rubber Compounding and Product Testing	DSC	RT23402	3	3	-	2	1	6	3	2.5	20	20	60	100	40	25	10	25*	-	10	25	10	175
General (Any-One)																									
3	Industrial Training	INP	ERT23003	-	-	-	-	120	30	4	-	-	-	-	-	-	25	-	-	25@	-	-	-	50
4	Short Term Training at NIRT	INP	ERT23004	-	-	-	-	120	30	4	-	-	-	-	-	-	25	-	-	25@	-	-	-	50
TOTAL				3	8	0	4	242	74	15	5	40	40	120	200	80	100	20	25	50	10	50	20	425

Abbreviations: CL- Classroom Learning, TL- Tutorial Learning, LL-Laboratory Learning, FA - Formative Assessments -Summative Assessment, IKS - Indian Knowledge System, SLA - Self Learning Assessment
Legends: @ Internal Assessment, # External Assessment, *# On Line Examination, @$ Internal Online Examination

Note: 1. FA-TH represents average of two class tests of 30 marks each conducted during the semester.

2. If candidate is not securing minimum passing marks in FA-PR of any course, then the candidate shall be declared as "Detained" in that semester.

3. If candidate is not securing minimum passing marks in SLA of any course, then the candidate shall be declared as fail and will have to repeat and resubmit SLA work.

4. Notional Learning hours for the semester are (CL+LL+TL+SL) hrs.* 15 Weeks

5. 1 credit is equivalent to 30 Notional hrs.

6. * Self learning hours shall not be reflected in the Time Table.

Course Category: Discipline Specific Course Core (DSC): 2, Discipline Specific Elective (DSE): 0, Value Education Course (VEC): 1, Intern. /Apprentice. /Project. /Community (INP): 0, Ability Enhancement Course(AEC): 2, Skill Enhancement Course (SEC) : 2, Generic Elective (GE) : 0

Department Coordinator	Head of Department	In-Charge	Principal
Curriculum Development Cell	Department of Rubber Technology	Curriculum Development Cell	Government Polytechnic, Mumbai

Programme : Diploma in Rubber Technology (Sandwich Pattern)													
Course Code: ERT23003				**Course Title: Industrial Training**									
Compulsory / Optional: Optional				**Exit after second year**									
Learning Scheme and Credits						**Assessment Scheme**							
CL	**TL**	**LL**	**SLH**	**Notional Learning Hours per Week**	**Credits**	**FA-TH**		**SA-TH (2 Hrs 30 min.)**	**FA-PR**	**SA**		**SLA**	**Total**
						T1	**T2**			**PR**	**OR**		
--	--	--	--	**30**	**4**	--	--	--	**25**	--	**25@**	--	**50**

Total IKS Hrs. for course: Nil

Abbreviations: CL- Classroom Learning, TL- Tutorial Learning, LL- Laboratory Learning, SLH-Self Learning Hours, NLH-Notional Learning Hours, FA - Formative Assessment, SA - Summative assessment, SLA- Self Learning Assessment **Legends:** @ Internal Assessment, # External Assessment, *# Online Examination, @$ Internal Online Examination

Note:

1. FA-PR represents Term work of 25 Marks
2. SA-OR represents Summative assessment of 25 Marks

I. Rationale

The four-week and minimum 120 hours industrial training for Rubber Technology students aligns with NEP-2020's Multiple Exits and Multiple Entries (MEME) framework, offering hands-on industry skills to enhance employability or livelihood opportunities. Students gain practical experience in equipment handling, manufacturing processes, troubleshooting, and safety protocols, preparing them for real-world challenges. This skill-based training ensures that students are equipped to enter the workforce or become self-sufficient even after a temporary exit from the program.

This exit course is offered to Rubber Technology students who have earned 80 credits upon completing the second year of the P23 scheme curriculum (40 credits in the first year and 40 credits in the second year) and are seeking a **"Diploma of Vocation"** certificate by exiting the program.

II. Industry / Employer Expected Outcome

Employers can expect students taking exit to be skilled in equipment handling, manufacturing processes, troubleshooting, and safety protocols, with the ability to adapt quickly to real-world work environments.

III. Course Outcomes: Students will be able to achieve & demonstrate the following COs on completion of course:

CO1	Adapt to the Industrial work Environment & Execute Industry-Relevant Tasks
CO2	Enhance employability skills

IV. General guidelines for organizing Industrial training:

The Industry/organization selected for Industrial training/ internships shall be Government/Public Limited/ Private limited / Startup /Centre of Excellence/Skill Centers/Skill Parks etc.

a. **Duration of Training-**

- Minimum 4 weeks' duration,
- Minimum 6 hours per day,
- Minimum 5 days per week
- Total 120 Notional hours(minimum)

b. **Period of Time slot- After fourth Semester**

c. **Industry area-** Workshops, Outlets/Skill based learning Environment in small scale commercial domains or industries.

V. Role of Department at the Institute:

Following are the activities to be performed by the concerned department.

Sr.No.	Activity	Timeline
1	Department should collect the data of students who wish to exit Diploma after second year.	After the examinations of second year
2	Department must ensure that the student has acquired 80 credits and passed the second year. Enroll the student by completing exit course registration in institute MIS. for exiting.	After declarations of results
3	Department places the qualified student for 4 weeks internships	Immediately after the result declaration.
4	EXAM CELL blocks the student Enrollment in the immediate next academic year.	On scrutiny of uploaded student documents.
5	EXAM CELL issues the internship certificate of the student on completion of Industrial training	On completion of exit-Industrial training
6	EXAM CELL issues **Diploma of Vocation**	On scrutiny of Industrial training certificate and on passing the evaluation.
7	EXAM CELL issues the above certification of **Diploma of Vocation** to the student and maintains documents related to it.	

VI. IMPORTANT GUIDELINES FOR STUDENTS

- Students will be placed in Industry/organization for industrial training. Students have to complete a minimum 4 weeks of training, minimum 120 hours (considering 5 days'/week x 6 hours per shift x 4 weeks) of training. During industrial training, students will be assigned to a polytechnic supervisor and industry supervisor. Polytechnic supervisor will visit the industry during training, guide the students, and resolve the issues of students if any. Industry supervisor will be the officer/shop in-charge/work manager etc., under whom the student is working in

industry daily.

- Students have to fill the forms/formats duly signed by institutional authorities along with a training letter and submit it to a training officer/mentor in the industry on the first day of training.
- Students have to maintain an industrial training diary & industrial training manual regularly.
- Students have to prepare the industrial training report at the end of training under the supervision of the polytechnic supervisor and industry supervisor.
- Continuous assessment for FA-PR will include updated, signed, and certified copies of the daily industrial training diary, weekly diary/industrial training manual, and the industrial training report. The FA-PR assessment will be jointly evaluated by both the industry supervisor and the polytechnic supervisor. Each supervisor will award marks out of 25. The final score will be determined by taking the average of the evaluations provided by both supervisors.
- Participating/completing mini projects, special assignments etc. and including it in industrial training report will be an added advantage for the students.
- During industrial training, students have to follow the rules and regulations of respective industries. Students should not share any confidential information/sketches/calculations/ formulae etc. of the company / department to anyone.
- Students not following the industrial rules, regulations, and safety measures may face disciplinary action taken by the industry.
- In case students face any major problem in industry such as an accident or any disciplinary issue then they should immediately report the same to the mentor at the institute.
- Students i.e. trainees must take oral/written prior permission for any type of leave from respective industry supervisors. Without permission students should not remain absent.
- Every student will be assessed by a polytechnic supervisor (SA-PR) after successful completion of training.
- No students will be allowed to change the industry on his/her own.
- Each student must adhere to the safety regulations of their assigned industry. They are required to follow the industry's safety protocols and procedures diligently.

VII. Documents/Activities to be completed during in plant Training:

- **Daily Diary:**

  Students will regularly maintain the daily diary noting daily activities completed during training, get it certified from concerned supervisors from time to time.

- **Industrial Training Manual:**

  Students will carefully read the guidelines of the industrial training manual, and follow the instructions given. Trainees will regularly maintain industrial training manual updated noting activities completed weekly during training, get it certified from concerned supervisors from time to time.

- **Industrial Training Report:**

  At the end of the training, trainees will prepare an industrial training report, detailing introduction of industry, products, activities performed/observed, assignments /projects participated/ completed, Skills achieved, and conclusions.

VIII. Suggestive format of industrial training report

Following format may be used for training reports. Actual format may differ slightly depending upon the nature of Industry/ Organization.

➢ Title Page
➢ Certificate
➢ Abstract
➢ Acknowledgement
➢ Content Page

Chapter 1	Organization structure of Industry and general layout.
Chapter 2	Introduction to Industry / Organization (history, type of products and services, turn over and number of employees etc.)
Chapter 3	Types of Major Equipments/raw materials/ instruments/machines/ hardware/software used in industry with their specifications, approximate cost, specific use and routine maintenance done
Chapter 4	Processes/ Manufacturing techniques and methodologies and material handling procedures
Chapter 5	Testing of Hardware/Software/ Raw materials/ Major material handling product (lifts, cranes, slings, pulleys, jacks, conveyor belts etc.) and material handling procedures.
Chapter 6	Safety procedures followed and safety gears used by industry.
Chapter 7	Particulars of Practical Experiences in Industry/Organization if any in Production/Assembly/Testing/Maintenance
Chapter 8	Detailed report of the tasks undertaken (during the training).
Chapter 9	Special/challenging experiences encountered during training if any (may include students liking & disliking of work places).
Chapter 10	Conclusion
Chapter 11	References / sources of information

IX. Assessment Methodologies/Tools:

Rubrics for Formative assessment (Assessment for Learning) & Summative Assessment (Assessment of Learning)

Rubric	Criteria	Weight/ Importance	Assessment Method	Expected Outcome
Adaptation to Work Environment	Ability to adapt to the industry-specific environment, equipment handling, and manufacturing processes.	30%	Observations by Industry Supervisor, Supervisor Reports	Students should demonstrate effective integration into the work environment and efficiently handle equipment.
Execution of Industry-Relevant Tasks	Execution of practical tasks aligned with industry standards (troubleshooting, maintenance, etc.).	30%	Industry Supervisor Evaluation, Project/Task Completion	Students should successfully complete tasks with minimal supervision and demonstrate skill competency.
Safety Compliance	Adherence to safety protocols and industry-specific safety measures (personal protective equipment, procedures, etc.).	20%	Safety Audits, Supervisor Reports	Students must follow all safety guidelines to ensure their well-being and others'.
Documentation & Reporting	Maintenance of training diaries, weekly logs, and final report including any additional projects or assignments.	10%	Polytechnic Supervisor Review, Continuous Assessment	Proper documentation demonstrating thorough engagement and understanding.
Professionalism & Employability Skills	Interaction with colleagues, industry supervisors, and adherence to professional conduct and industry rules.	10%	Supervisor Feedback, Peer/Teamwork Evaluation	Students should exhibit professionalism, effective communication, and a strong work ethic.

X. Academic Consultation Committee/Industry Consultation Committee:

Sr. No	Name	Designation	Institute/Organization
1	Mr. G. B.Patil	Senior Lead Engineer	Stellantis India Pvt.Ltd. Pune.
2	Mr. K.B.Salunke	Selection Grade Lecturer in Mechanical Engineering	Government Polytechnic, Thane.
3	Dr. Shirish D.Dhobe	Selection Grade Lecturer in Mechanical Engineering	Government Polytechnic, Pune.
4	Mr. K. V. Patil	Selection Grade Lecturer in Mechanical Engineering	Government Polytechnic, Mumbai
5	Dr.V.U.Rathod	Selection Grade Lecturer in Mechanical Engineering	Government Polytechnic, Mumbai
6	Mr. E. C. Dhembare	Lecturer in Mechanical Engineering	Government Polytechnic, Mumbai

Coordinator,	Head of Department
Curriculum Development,	Department of Rubber Technology
Department of Rubber Technology	
I/C, Curriculum Development Cell	Principal