

SUMMER INTERNSHIP REPORT · JUNE-JULY 2025

Internship Report

Production Engineering Intern at Precitech Components

SUBMITTED BY

Vignesh Kumar

Reg. No. 211122114056

ORGANISATION

Precitech Components, Chennai

FACULTY MENTOR

Dr. R. Senthil

INTERNSHIP CERTIFICATE

This is to certify that Vignesh Kumar, a student of Bachelor Of Engineering (Mechanical Engineering) at Your College of Engineering, Chennai, has successfully completed an internship with Precitech Components, Chennai, as Production Engineering Intern from 16 June 2025 to 26 July 2025.

During the internship the student worked with our Production and Quality team and contributed to cycle-time study on flange machining. We found the student sincere, punctual and eager to learn, and we wish them every success.

(Replace this page with the certificate issued by your organisation, if one was provided.)

Mr. S. Balaji

Production Manager, Precitech Components

HR Department

Precitech Components

Declaration

I hereby declare that this internship report, submitted to the Department of Mechanical Engineering, Your College of Engineering, Chennai, is a record of the work I carried out at Precitech Components from 16 June 2025 to 26 July 2025 under the supervision of Mr. S. Balaji and the guidance of Dr. R. Senthil. The report has not been submitted elsewhere for any degree or diploma.

Place: _____ Date: _____

Vignesh Kumar

Acknowledgement

I am grateful to Precitech Components for giving me the opportunity to work as Production Engineering Intern and to experience a professional environment first-hand.

I sincerely thank my industry mentor, Mr. S. Balaji, for patient guidance, regular feedback and for trusting me with real work. I also thank the members of the Production and Quality team, who welcomed me and answered my questions.

I am thankful to Dr. R. Senthil, my faculty mentor, and to the Head of the Department of Mechanical Engineering for their support and encouragement.

Finally, I thank my family and friends for their constant motivation.

Executive Summary

This report describes my 6-week internship at Precitech Components, a manufacturer of machined components for automotive and industrial customers. During the internship I worked as Production Engineering Intern in the Production and Quality team. I studied CNC operations, process sheets, inspection methods and 5S practices, and worked on a small cycle-time improvement study.

Organisation	Precitech Components, Chennai
Domain	Precision automotive components manufacturing
Role	Production Engineering Intern
Department	Production and Quality
Duration	16 June 2025 – 26 July 2025 (6 weeks)
Industry mentor	Mr. S. Balaji, Production Manager
Tools used	CNC lathes, Vernier and micrometer, Excel, Process sheets

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01 Company Profile

About the Organisation

Precitech Components manufactures precision-machined parts such as shafts, flanges and housings for automotive and industrial customers. The plant has CNC turning and milling centres, a heat-treatment unit and an inspection room.

Vision and Mission

Vision

To be a trusted supplier of zero-defect components.

Mission

To deliver precise parts on time through disciplined processes and continuous improvement.

Products and Services

- CNC turning and milling
- Grinding and finishing
- Heat treatment
- Inspection and quality documentation

Organisational Structure

The organisation is structured into functional teams, each led by a manager who reports to the leadership team. Interns are attached to one team and assigned an industry mentor.

Department	Main responsibilities
Production	Machining operations and scheduling
Quality	Inspection, gauges and customer audits
Maintenance	Preventive and breakdown maintenance
Stores	Raw material and finished goods

02 Internship Overview

Objectives of the Internship

1. Understand manufacturing processes and shop-floor practice.
2. Learn quality inspection and documentation.
3. Apply industrial engineering concepts to a real problem.

Role and Responsibilities

- Observing machining operations
- Recording cycle times
- Assisting inspection
- Updating 5S checklists

Tools and Technologies

Tool / technology	How it was used
CNC turning centre	Observed set-up and programs
Measuring instruments	Inspection of critical dimensions
Excel	Time study analysis
Process sheets	Understanding operation sequence

03 Weekly Work Log

The table below summarises the work done in each week. Detailed notes for each week follow.

Week	Dates	Tasks performed	Key learning
1	16–20 Jun	Plant induction and safety	Plant layout and safety rules
2	23–27 Jun	CNC turning: set-up and programs	G-codes and tool offsets
3	30 Jun–4 Jul	Inspection room and measuring instruments	Tolerances and gauges
4	7–11 Jul	Time study on a flange line	Identifying non-value-added steps
5	14–18 Jul	Improvement trial with the team	Fixture changes and their effect
6	21–25 Jul	Documentation and presentation	Writing an improvement report

Week 1: Plant induction and safety

Work done: Plant induction and safety. I kept a daily diary of tasks and questions and reviewed it with my mentor at the end of the week.

Learning: Plant layout and safety rules.

Week 2: CNC turning: set-up and programs

Work done: CNC turning: set-up and programs. Most of the week was spent shadowing team members and then repeating the tasks independently.

Learning: G-codes and tool offsets.

Week 3: Inspection room and measuring instruments

Work done: Inspection room and measuring instruments. At the weekly review my mentor suggested improvements, which I applied the following week.

Learning: Tolerances and gauges.

Week 4: Time study on a flange line

Work done: Time study on a flange line. I documented the steps I followed so that the next intern could repeat them easily.

Learning: Identifying non-value-added steps.

Week 5: Improvement trial with the team

Work done: Improvement trial with the team. I kept a daily diary of tasks and questions and reviewed it with my mentor at the end of the week.

Learning: Fixture changes and their effect.

Week 6: Documentation and presentation

Work done: Documentation and presentation. Most of the week was spent shadowing team members and then repeating the tasks independently.

Learning: Writing an improvement report.

04 Projects Undertaken

Project 1: Cycle-time study on flange machining

Problem: The flange line was a bottleneck.

Approach: Recorded cycle times, separated machining and handling time and proposed a quick-clamp fixture.

Outcome: Trial showed a reduction in handling time (sample outcome).

Figure placeholder — screenshot, drawing or photo of your work

Figure 1: Cycle-time study on flange machining

Project 2: 5S audit support

Problem: Stores area needed better organisation.

Approach: Helped label racks and update the audit checklist.

Outcome: Audit score improved in the next review.

Figure placeholder — screenshot, drawing or photo of your work

Figure 2: 5S audit support

05 Skills and Learning Outcomes

Skill area	What I learned
Technical	CNC basics, inspection, time study
Quality	Tolerances, gauges, documentation
Professional	Shift discipline, teamwork with operators

Challenges Faced

- Noise and pace of the shop floor
- Getting accurate time readings

06 Conclusion

The internship gave me a realistic view of manufacturing and showed me how small improvements add up in production.

Suggestions for future interns

Wear safety shoes from day one and spend time with operators — they know the machines best.

07 Appendix: Attendance and Evaluation

Week	Days present	Mentor remarks	Mentor sign
1	5 / 5		
2	5 / 5		
3	5 / 5		
4	5 / 5		
5	5 / 5		
6	5 / 5		

Mentor evaluation (to be filled by the organisation)

Criterion	Excellent	Good	Average	Needs work
Technical skills				
Communication				
Punctuality				
Teamwork				
Initiative				