

PLASTIC INJECTION MOLDING TECHNOLOGY CERTIFICATE

Program code: PMTC-CC

Location: Middlesex

Program Description

The Plastic Injection Molding Technology certificate introduces various molding techniques and types of mold injection components. Throughout this hands-on program, students become familiar with the injection molding process, covering both the underlying design principles and laboratory applications. This certificate features lectures and assigned reading designed to introduce students to the concepts and specifications of injection molding. Students are exposed to the procedures associated with practical analyses of injection molding. This skill set can be applied to careers in injection molding. Classroom lectures and assigned readings apply knowledge in a laboratory setting. Each lab introduces students to practical setup procedures, start-up, operation, and shutdown of injection molding machinery. The operation of actual machinery and use of practical molding techniques optimize students' experience within this certificate. OSHA 10 Certification and Lean Certification are embedded within this certificate; students obtain certification in those areas.

Learning Outcomes

Graduates will be able to:

1. Identify the operational techniques used for various types of injections molding components.
2. Demonstrate setup, operation, and shutdown requirements associated with injection molding machinery.
3. Identify and document detailed mold specifications.
4. Identify specifications for mold feeding systems.
5. Identify and analyze parameters associated with materials used in injections molding processes.
6. Conduct flow analysis for injection molding systems.
7. Identify and document the undercut process and removal specifications.
8. Identify and document the specifications for plastic components and their designs.
9. Inspect and document defects in plastic parts.

Certificate Requirements

| Code | Title | Credits |
|-------------------------|---|---------|
| Required Courses | | |
| MFG 1414 | Quality and Lean Principles | 3 |
| MFG 1420 | Metrology | 3 |
| MFG 1453 | Benchwork | 2 |
| MFG 1467 | Conventional Process Machining Lab | 4 |
| or MFG 1477 | Machine Technology Fundamentals | |
| MFG 2439 | Geometric Dimension and Tolerancing (G, D, and T) | 3 |
| EGR 1120 | Engineering Drawing Specs | 3 |
| CAD 2200 | Parametric Design (SolidWorks) | 3 |

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| MFG 1501 | Introduction to Injection Molding Technology | 3 |
| MFG 1502 | Injection Molding Design Lab | 4 |
| MFG 1503 | Injection Plastic Materials Lab | 4 |
| MFG 1504 | Inject Mold Machine Setters | 3 |
| Total Credits | | 35 |

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