

COMPOSITE TOOL DESIGN (CERT)

CERTIFICATE OF ACHIEVEMENT

The Composites Tool Design Program provides the diverse student body in the surrounding regional community with advanced education in tool design for plastics and composites manufacturing technology and serves as a bridge between students who seek job skills, industry certifications or a Certificate of Achievement for employment. The Program provides a high quality of instruction to achieve its objectives. The Certificate of Achievement in Plastic/Composite Tool Design allows the student to learn basic tools design, parametric 3d modeling, dimensioning, tolerancing, and design of plastic parts. The student also learns the practical aspects of fabricating parts and tooling for both composite and plastic projects. Some of the jobs available for holders of this certificate are tooling technicians, tool designer, mechanical designer, injection mold designer, design associate, associated manufacturing engineer, junior manufacturing engineer and similar positions.

Program Student Learning Outcomes

- Student demonstrate safe work habits around plastics machinery.
- Students communicate clear technical instructions.
- Students differentiate between the various types of plastic.
- Students employ shop drawings to produce plastic parts to drawing specifications.
- Students identify the specific applications of plastic resin systems.
- Students recognize the process for manufacturing various plastic parts.
- Students use percentages to mix resins, fillers, and colors.
- Students utilize ratios and fractions to mix materials.

Program Requirements

Code Number	Course Title	Units
Required Courses		
ENGT 111	Plastics Technology	3.0
ENGT 116	Blueprint Reading and Production	4.0
ENGT 117	Geometrical Dimensioning and Tolerancing and Model Based Definition	4.0
ENGT 259	Solidworks Introduction	4.0
ENGT 263	SolidWorks for Industrial Mold Tools Design	4.0
ENGT 209	Plastics Injection Molding I	3.0
or ENGT 250	Fiberglass and Vacuum Infusion Process Technology	
or ENGT 251	Composites Fabrication and Tooling	
Total Units		22

Recommended Courses

Code Number	Course Title	Units
ENGT 100	Soft Skills for Manufacturing, Technology and Engineering Professionals	3.0
ENGT 131	Design Fundamentals Including 3D Modeling	3.0
ENGT 209	Plastics Injection Molding I	3.0

ENGT 281	Sustainable Toy Design with Solidworks	3.0
MTT 100	Machine Tool Introduction	2.0
MTT 131	Geometric Tolerance Inspection using Verisurf	3.0
MTT 180	Robotics for Computer Numerically Controlled Machines	3.0
NPD 101	Innovation Using Rapid Prototyping	3.0
NPD 103	Tooling and Materials for New Product Development	3.0