

COMPOSITE TOOL DESIGN (A.S.)

ASSOCIATE OF SCIENCE

The Composites Tool Design Program provides the diverse student body in the surrounding regional community with advanced education in plastic manufacturing technology and serves as a bridge between students who seek job skills, industry certifications or an Associate Degree for employment. The Program provides a high quality of instruction to achieve its objectives. The Associate in Arts in Plastic/Composite Tool Design allows the student to learn basic modeling, dimensioning, tolerancing, and mold design of plastic parts. The student also learns the practical aspects of fabricating parts and tooling for both composite and plastic projects.

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 Electives

In order to expand on the knowledge of tooling design, students are recommended to take one or more of the recommended electives:

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
ET 101	Principles of Engineering Technology	3.0
ET 103	Industrial Process Control	2.0
NPD 101	Innovation Using Rapid Prototyping	3.0
NPD 103	Tooling and Materials for New Product Development	3.0

Associate of Arts Degree Requirements

Students must complete the required major courses, the Cerritos College Associate of Arts General Education requirements, and electives as needed. Students must earn a 2.0 grade point average and earn a grade of "C" or higher in major/emphasis courses.