

Program Competencies for the Industrial Design Technology Program

A Student will be able to:

1. Demonstrate skill in scaling of 3-D objects.
2. Create patterns and molds to be cast in appropriate materials.
3. Demonstrate clean and safe work habits.
4. Compile a foundation of visual literacy pertinent to industrial design.
5. Using a vector-based program, students will demonstrate basic drawing, editing, dimensioning and text functions.
6. Generate a series of drawings by navigating CAD menu systems.
7. Demonstrate the use of point, line, shape, value, proportion, color, texture and spatial elements of design.
8. Describe and demonstrate how nature can be a source of design.
9. Acquire knowledge of methods and materials to create three dimensional scale illusions such as water, rock, the effects of weather and natural and human environments.
10. Create diorama to include presentation effects such as natural and human environments.
11. Understand drafting symbology.
12. Demonstrate drafting competencies in orthographic and auxiliary projection.
13. Understand dimensioning and scaling.
14. Use perspective to observe and depict the illusion of three-dimensional space on a two dimensional surface.
15. Identify and apply to principles of isometric and oblique projection.
16. Present professional level renderings and schematic drawings for client review.
17. Demonstrate an understanding of human scale in relationship to an exhibit space.
18. Present applications of graphics and typography.
19. Acquire a basic knowledge of human anatomy, dimensions, and proportions.
20. Apply human factors that include, anthropometrics, biodynamics and ergonomics.

21. Demonstrate the ability to produce a 3D mock up of a small product.
22. Demonstrate the ability to create mock-ups using a variety of materials, such as paper, wire, rubber, plastics, metal, wood, foam, and plaster.
23. Show working skills and finishing skills - paint, graphics and presentation.
24. Develop basic jewelry techniques, such as sawing, soldering, casting, etching, and finishing.
25. Demonstrate the proper use of shop tools in a safe and efficient manner.
26. Demonstrate a working knowledge of:
 - a. Adhesives and fasteners
 - b. Small tools
 - c. Wood (including terminology)
 - d. Metal (including terminology)
 - e. Casting (including terminology)
 - f. Stationary power tools (lathes, mill, table saw, vacuum form, etc.)
27. Understand and demonstrate decimal dimensioning and tolerancing.
28. Competently execute drawings using effective projection and composition.
29. Produce a series of form development/sketch models leading to a competently finished sight model suitable for client review.
30. Demonstrate working knowledge of plastic forming and fabrication.
31. Develop skills in traditional and digital media for children.
32. Develop a product line of toys around initial concepts.
33. Demonstrate skills in market plan development around product concept to include graphic, 3D mock up, packaging and distribution.
34. Develop a transportation concept.
35. Present three-dimensional solid modeling efficiency.