

ARTD 155
Two-Dimensional Digital Fabrication
3 Credits

Community College of Baltimore County
Common Course Outline

Description

ARTD 155 – Two-Dimensional Digital Fabrication: introduces digital fabrication technologies used in the creation of two-dimensional art and design. Technology covered includes laser cutters, vinyl printers/cutters, direct to garment printers, embroidery machines, and related software. Students produce prototypes and projects from their art and design work

Pre-requisites: ARTD 129 and ARTD 140, or permission of the program coordinator

Co-requisites: ARTD 113 or permission of the program coordinator

Overall Course Objectives

Upon completion of this course, students will be able to:

1. define digital fabrication as it relates to the arts;
2. identify equipment used in digital fabrication;
3. create two-dimensional designs using industry standard software;
4. produce compatible digital files for output;
5. perform basic operational setup for two-dimensional fabrication technology;
6. operate digital fabrication equipment for the creation of two-dimensional art and design projects;
7. test fabrication output for desired results;
8. develop workflow strategies for the production of products via digital fabrication;
9. output prototypes, parts, and final projects using a variety of digital fabrication techniques;
10. assemble multiple fabricated parts into cohesive art forms;
11. critique design and products; and
12. execute basic maintenance on digital fabrication machines.

Major Topics

- I. Digital fabrication in the arts
 - a. Sculpture
 - b. Industrial design
 - c. Graphic design
 - d. Illustration
 - e. Interior design
- II. Digital fabrication software
 - a. Vector software (Adobe Illustrator)

The Common Course Outline (CCO) determines the essential nature of each course.

For more information, see your professor's syllabus.

- b. Raster software (Adobe Photoshop)
 - c. Proprietary machine-specific software (digitizing software, etc.)
- III. Effective digital fabrication file formats
 - a. .AI (Illustrator)
 - b. .PDF (Illustrator and Photoshop)
 - c. .JPG (Photoshop)
 - d. .PNG (Photoshop)
- IV. Materials used in fabrication
 - a. Papers
 - b. Woods
 - c. Fabrics
 - d. Threads
 - e. Inks
- V. Digital fabrication workflow
 - a. Sketching for output consideration
 - b. Converting sketches to vector file formats
 - c. Designating cut lines
 - d. Generating parts of a whole
- VI. Vinyl Cutter/Vinyl Printer/Cutter
 - a. Start-up process
 - b. File preparation for output
 - c. Post-output clean up
 - d. Safety considerations
- VII. Laser Cutter
 - a. Start-up process
 - b. File preparation for output
 - c. Materials for cutting
 - d. Materials for engraving
 - e. Post-output clean up
 - f. Safety considerations
- VIII. Embroidery Machine
 - a. Start-up process
 - b. File preparation for output
 - c. Materials for embroidery
 - d. Post-output clean up
 - e. Safety considerations
- IX. Machine maintenance
 - a. Consumables
 - b. Basic parts
 - c. Troubleshooting
- X. The professional field of fabrication
 - a. Makerspaces
 - b. Commercial uses
 - c. Marketing work
 - d. Adapting fabrication skills to job-specific requirements

Course Requirements

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Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- One project from each of the following machines:
 - Vinyl cutter
 - Vinyl printer/cutter
 - Laser cutter/engraver
 - Embroidery machine
 - Direct to garment printer
- A process notebook (physical or digital) of digital fabrication steps, techniques, and troubleshooting
- One presentation on an artist who uses digital fabrication technology in their work

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