# LINC 84D: VECTOR-BASED GRAPHIC DESIGN FOR MAKERSPACES

## Foothill College Course Outline of Record

| Heading | Value |
|---|---|
| **Effective Term:** | Summer 2021 |
| **Units:** | 1 |
| **Hours:** | 1 lecture per week (12 total per quarter) |
| **Advisory:** | Basic computer skills and knowledge of Macintosh or Windows operating systems; familiarity with web browsers, email, downloading, and uploading. |
| **Degree & Credit Status:** | Degree-Applicable Credit Course |
| **Foothill GE:** | Non-GE |
| **Transferable:** | CSU |
| **Grade Type:** | Letter Grade (Request for Pass/No Pass) |
| **Repeatability:** | Not Repeatable |

## Description

This course provides an overview of web-based graphic design software, with a specific focus on designing for use with makerspace tools. Students will learn the basic procedures of vector design, including drawing objects, adjusting stroke outline and fill patterns, and working with layers. Students will both design new vector graphics and import and adapt existing graphics in order to facilitate their physical production using makerspace tools. Special emphasis will be placed on formatting vector graphics to meet the import requirements of different production tools, including laser cutters, vinyl cutters, CNC machines, and 3-D printers.

## Course Objectives

The student will be able to:

1. Use the interface, tools, and basic techniques of a vector-based graphic design program to create a graphic design document.
2. Identify vector and bitmap graphics and know how each functions in a makerspace context.
3. Use line and pen tools to draw and trace graphics.
4. Create and manipulate shapes to develop complex objects.
5. Create typographic illustrations for makerspace purposes.
6. Format various graphics based on the requirements of different makerspace tools.

## Course Content

1. Interface and tools
    a. Work area layout
    b. Customizing work area
    c. Tool functions
2. Graphic file formats
    a. Attributes of vector graphics
    b. Converting bitmap graphics to vector format
    c. Refining conversions
3. Line and pen tools
    a. Line tool
    b. Pen tool
    c. Pen curvature tool
    d. Layer management
    e. Tracing illustrations
4. Shapes
    a. Shape creation tools
    b. Transform, rotate, warp, skew
    c. Merging shapes
    d. Slicing shapes
5. Typography
    a. Font manipulation
    b. Typographic conversions
    c. Type on a path
6. Graphic formatting
    a. Laser cutter formatting
    b. Vinyl cutter formatting
    c. CNC machine formatting
    d. 3-D printer formatting

## Lab Content

Not applicable.

## Special Facilities and/or Equipment

1. When offered on campus: Lecture room equipped with computer projector system, whiteboard, and internet connectivity. Computer laboratories with internet connectivity and computers or internet enabled devices running standard operating systems (e.g., iOS, MacOS, Windows, Android, Linux)
2. When taught online via Canvas students must have current email accounts and/or ongoing access to computers with email and web browsing capability

## Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Designing and developing makerspace illustration projects and products
Presenting the product or project to peers, capturing feedback, and using it to revise the product or project
Making constructive contributions to class discussions and peer review feedback

## Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

The student will be writing notes, listening, and participating in lecture presentation
The student will be observing an instructor-led demonstration and/or actively practicing the demonstrated skills

The student will be presenting and communicating their ideas in discussion and/or participating in peer reviews

## Representative Text(s) and Other Materials

Glitschka, Von. Vector Basic Training: A Systematic Creative Process for Building Precision Vector Artwork, 2nd ed.. 2015.

Frasie, Radu. Graphic Design Handbook, 1st ed.. 2018.

## Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Writing assignments include a major course project and multiple developmental projects, online discussion response, and critical analysis of peer's educational projects.
2. Outside assignments include conducting project development, planning, reading, and developing the project through an iterative process.
3. When taught online these methods may take the form of video, audio, animation and webpage presentations. Writing assignments are completed online.

## Discipline(s)

Instructional Design/Technology