## CS 78.1A Course Outline as of Spring 2022

## **CATALOG INFORMATION**

Dept and Nbr: CS 78.1A Title: MAKE IT WITH 3D PRINTING Full Title: Make It with 3D Printing Last Reviewed: 9/24/2018

Units		<b>Course Hours per Week</b>		Nbr of Weeks	<b>Course Hours Total</b>	
Maximum	1.50	Lecture Scheduled	3.00	8	Lecture Scheduled	24.00
Minimum	1.50	Lab Scheduled	1.00	4	Lab Scheduled	8.00
		Contact DHR	0		Contact DHR	0
		Contact Total	4.00		Contact Total	32.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 48.00

Total Student Learning Hours: 80.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

### **Catalog Description:**

Learn where to find 3D models and turn them into physical objects using a variety of 3D printers. Includes learning about the features and abilities of 3D printers and the software and hardware used for 3D printing.

**Prerequisites/Corequisites:** 

**Recommended Preparation:** Eligibility for ENGL 100 or ESL 100

### **Limits on Enrollment:**

### **Schedule of Classes Information:**

Description: Learn where to find 3D models and turn them into physical objects using a variety of 3D printers. Includes learning about the features and abilities of 3D printers and the software and hardware used for 3D printing. (Grade or P/NP) Prerequisites/Corequisites: Recommended: Eligibility for ENGL 100 or ESL 100 Limits on Enrollment:

# **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

AS Degree: CSU GE:	Area Transfer Area			Effective: Effective:	Inactive: Inactive:
IGETC:	Transfer Area			Effective:	Inactive:
CSU Transfer	Transferable	Effective:	Spring 2019	Inactive:	
UC Transfer:		Effective:		Inactive:	

## CID:

## **Certificate/Major Applicable:**

Both Certificate and Major Applicable

# **COURSE CONTENT**

## **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

- 1. Find and download existing 3D models.
- 2. Print objects on a selection of 3D printers.

## **Objectives:**

At the conclusion of this course, the student should be able to:

- 1. Locate existing 3D models to meet project requirements.
- 2. Identify 3D printer parts and components.
- 3. Work with slicing software.
- 4. Operate 3D printers.

## **Topics and Scope:**

- I. Understanding 3D Printing
  - A. Hardware
    - 1. Filament
    - 2. Types of 3D printers
    - 3. 3D printer components
  - B. Software
    - 1. File formats
    - 2. Slicing software
- II. Locating Pre-Built 3D Models
- III. Configuring and Using Slicing Software
- IV. Printing 3D Objects
  - A. Proper filament selection
  - B. Safety
  - C. Operating procedures

All topics are covered in the lecture and lab portions of the course.

#### Assignment:

Lecture-Related Assignments: 1. Weekly assignments (3 - 5)

Weekly assignments (5 - .
Terminology glossary

3. One final exam

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because skill demonstrations are more appropriate for this course.

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Weekly assignments, glossary assignment

**Exams:** All forms of formal testing, other than skill performance exams.

Final exam

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Attendance and participation

### **Representative Textbooks and Materials:**

Getting Started with 3D Printing: A Hands-on Guide to the Hardware, Software, and Services That Make the 3D Printing Ecosystem. 2nd ed. Kloski, Liza and Kloski, Nick. Maker Media. 2018

	Writing 0 - 0%
	Problem solving 0 - 0%
	Skill Demonstrations 60 - 70%
L	
	Exams
	30 - 30%

Other Category

0 - 10%