

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		Course Hours per Week		Nbr of Weeks	Course Hours Total	
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:

Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	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)
2. 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.

Writing
0 - 0%

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

None

Problem solving
0 - 0%

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

Weekly assignments, glossary assignment

Skill Demonstrations
60 - 70%

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

Final exam

Exams
30 - 30%

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

Attendance and participation

Other Category
0 - 10%

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