

**CS 78.1A Course Outline as of Spring 2019****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:**

<b>AS Degree:</b>	<b>Area</b>	Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>	Effective:	Inactive:

<b>IGETC:</b>	<b>Transfer Area</b>	Effective:	Inactive:
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<b>CSU Transfer:</b>	Transferable	Effective:	Spring 2019	Inactive:
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<b>UC Transfer:</b>	Effective:	Inactive:
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**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **Approval and Dates**

Version:	01	Course Created/Approved:	9/24/2018
Version Created:	8/21/2018	Course Last Modified:	9/28/2021
Submitter:	Donald Laird	Course last full review:	9/24/2018
Version Status:	Approved New Course (First Version)	Prereq Created/Approved:	9/24/2018
Version Status Date:	9/24/2018	Semester Last Taught:	Fall 2019
Version Term Effective:	Spring 2019	Term Inactive:	Spring 2022

## **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:**

Upon completion of the course, students will 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

## **OTHER REQUIRED ELEMENTS**

### **STUDENT PREPARATION**

Matric Assessment Required:	E	Requires English Assessment
Prerequisites-generate description:	NP	No Prerequisite
Advisories-generate description:	A	Auto-Generated Text
Prereq-provisional:	N	NO
Prereq/coreq-registration check:	N	No Prerequisite Rules Exist
Requires instructor signature:	N	Instructor's Signature Not Required

### **BASIC INFORMATION, HOURS/UNITS & REPEATABILITY**

Method of instruction:	02	Lecture
	04	Laboratory
Area department:	CS	Computer Studies
Division:	72	Arts & Humanities
Special topic course:	N	Not a Special Topic Course
Program status:	1	Both Certificate and Major Applicable
Repeatability:	00	Two Repeats if Grade was D, F, NC, or NP
Repeat group id:		CS 781 781A

### **SCHEDULING**

Audit allowed:	Y	Auditable
Open entry/exit:	N	Not Open Entry/Open Exit
Credit by exam:	N	Credit by examination not allowed
Budget code: Program:	0000	Unrestricted
Budget code: Activity:	0701	Computer & Information Science

### **OTHER CODES**

Discipline:	Computer Information Systems	
Basic skills:	N	Not a Basic Skills Course
Level below transfer:	Y	Not Applicable
CVU/CVC status:	N	Not Distance Ed
Distance Ed Approved:	N	
Emergency Distance Ed Approved:	N	None
Credit for Prior Learning:	N	Agency Exam
	N	CBE
	N	Industry Credentials
	N	Portfolio
Non-credit category:	Y	Not Applicable, Credit Course
Classification:	Y	Career-Technical Education
SAM classification:	C	Clearly Occupational
TOP code:	0702.00	Computer Information Systems
Work-based learning:	N	Does Not Include Work-Based Learning
DSPS course:	N	Not a DSPS Course
In-service:	N	Not an in-Service Course
Lab Tier:	21	Credit Lab - Tier 1