

# Palo Verde College

## Program Outline Report

### Program Basics

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Program Title:                      | 3D Printing and Rapid Prototyping<br>Certificate of Career Preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Program Status:                     | Active from 2020-21 Summer (2021SU)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Department:                         | Computer Information Systems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Award Type:                         | Certificate of Career Preparation (Credit)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Program/Catalog Description         | The 3D Printing and Rapid Prototyping Certificate of Career Preparation is designed to teach students the hardware, software, tools, skills, and techniques utilized in this cutting-edge emerging technology. In this program students will learn the software that is used to design prototypes, the software used to prepare digital objects for print, the various 3D Printing filament types and applications, & post processing. Students will be able to use cutting edge tools and techniques to enhance their projects in this program. 3D Printing history, growth of this technology, how it is being used today, and where it is headed will be covered in this certificate program. Various Slicing software and printer styles and manufacturers will be covered. Students completing this certificate program will be ready to immediately begin their own business using this technology, find employment in FDM related businesses, & digital CAD modeling. Since this is such a new technology its uses and applications grow every day. This degree requires 12 units/4 courses (CIS 201, CIS 202, CIS 203, & CIS 204) |
| Control Number:                     | No value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Credential ID:                      | No value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Transferability:                    | No value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| (SP01) Program TOP Code:            | 0699.00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| (SP01) Program TOP Code:            | Other Media and Communications                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| (SP02) Student Program Award:       | Certificate requiring 6 to fewer than 18 semester units (not approved by Chancellor's Office)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Maximum Credits:                    | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Minimum Credits:                    | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Curriculum Committee Approval Date: | No value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Board of Trustees Approval Date:    | No value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| External Review Approval Date:      | No value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

### Proposal Details

|                                             |                            |
|---------------------------------------------|----------------------------|
| Proposal Start:                             | 2020-21 Summer (2021SU)    |
| What changes have been made to the program: | Updating PLOs per Peterson |
| Program Justification:                      | No value                   |

### Submission Rationale

No value

## Program Requirements

### 3D Printing and Rapid Prototyping Certificate of Career Preparation (Total 12)

#### Complete all of the following

|                                                                        |   |
|------------------------------------------------------------------------|---|
| CIS201 - Introduction to 3-D Printing, Setup, & Rapid Prototype Design | 3 |
| CIS202 - 3-D Printing: Basic Model Making                              | 3 |
| CIS203 - 3D Printing, Basic Model Finishing                            | 3 |
| CIS204 - 3D Rapid Model Making & Prototype Development                 | 3 |

## Recommended Sequences

No value

## Program Outcomes

### 3D printing and Rapid Prototyping Certificate of Career Preparation

| PSLO | Performance |
|------|-------------|
|------|-------------|

|                                                                                                                                               |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----|
| Acquire and validate resources to solve technical problems; use information resources to gather discipline specific information or materials. | 70 |
|-----------------------------------------------------------------------------------------------------------------------------------------------|----|

|                                                                                                                                      |    |
|--------------------------------------------------------------------------------------------------------------------------------------|----|
| Demonstrate understanding of appropriate 3D printing related tools, equipment, and software to create functional 3D printed objects. | 70 |
|--------------------------------------------------------------------------------------------------------------------------------------|----|

## Program Narrative

### Narrative Item 1. Program Goals and Objectives

No Value

### Narrative Item 2. Catalog Description

No Value

### Narrative Item 3. Program Requirements

No Value

### Narrative Item 4. Master Planning (Not needed for Certificates of Career Preparation)

No Value

### Narrative Item 5. Enrollment and Completer Projections (Not needed for Certificates of Career Preparation)

No Value

**Narrative Item 6. Place of Program in Curriculum/Similar Programs (Not needed for Certificates of Career Preparation)**

No Value

**Narrative Item 7. Similar Programs at Other Colleges in Service Area (Not needed for Certificates of Career Preparation)**

No Value

**LMI and Analysis**

No Value

**Advisory Committee Recommendations (Not needed for Certificates of Career Preparation)**

No Value

**Regional Consortia Recommendations (Not needed for Certificates of Career Preparation)**

No Value