

#16

COMPLETE

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Page 1: For Annual Planning/Program Review Requests AND Off-Cycle Requests

Q1 **2023-24**

Technology Plan Year

Q2

Title of Request

Hardware Purchase - Raise3D Pro 2 Plus 3D printer

Q3

Location of Request

Cuyamaca College

Q4

Department

Engineering

Q5

Contact Person

Name	Keenan Murray
Email Address	keenan.murray@gcccd.edu

Q6

Description Please provide a brief description of the technology/software or technology project and its core goal(s).

We currently have 5 Raise3D Pro 2 Plus printers in our Maker Space and are requesting an additional printer to meet our increasing printing demands. Last semester, the 5 printers completed 186 print jobs for a total run-time of 341 days. As we continue to develop more project-based learning and hands-on experiences, the need for access to the 3D printers is increasing. Hence, we are requesting another 3D printer.

We have been implementing 3D printing into our Introduction to Engineering & Design course expose our new engineering students to the innovative technology of 3D printing and provide hands-on experience working with 3D printers. Students use the printers for projects such as creating derby cars to race, recreating historical structures, and designing phone holders. We have also expanded 3D printing into our sophomore-level Statics courses with a project where students create structures that appear to be unbalanced, but actually remain upright due to student design. We also have plans to incorporate 3D printing projects into other courses too!

Page 2: Proposal Justification

Q7

Please explain how the technology or enhancement supports the strategic plan and impacts students, employees, the college, and/or the district. Which Strategic Plan priority (or priorities) are supported by this request? To access the Strategic Plan, please click here.

Increase equitable access (enrollment),

Eliminate equity gaps in course success (passing grade in class)

Increase persistence eliminate equity gaps (re-enrolling the subsequent semester or year)

Increase completion and eliminate equity gaps (graduating with a degree/certificate, or transferring)

Q8

How does the request support the above priorities?

Our hypothesis has been we can reduce equity gaps by creating course content that is project-based and hands-on. So far, we have significantly reduced our access equity gaps and need to focus on success equity gaps. Part of our solution is to ensure students have readily available access to the 3D printers to meet student needs and timetables for projects. Last semester, there was a 2-month period when students waited days to a week to gain access to the 3D printers. We are hoping to ease this issue with another 3D printer.

Q9

Students

Who would this impact? Please select all that apply.

Q10

What is the number of students or employees impacted per semester?

300

Q11

How would this impact the above group(s)?

The additional 3D printer will allow students improved access to the technology, which will allow the students to complete their course projects more quickly and with time flexibility instead of limiting access to the 3D printers due to long job que times. We hypothesize this will help improve success and persistence equity gaps as students will have readily available access to the technology to complete their projects.

Q12

No

Does the technology support a state-wide initiative or is it a legal mandate or in support of a legal mandate?

Q13

Respondent skipped this question

If yes, please explain how the technology supports a state-wide initiative or is it a legal mandate or in support of a legal mandate?

Q14

Please be aware that projects, once approved, are typically scheduled 6 months to a year in advance. Consider the consequences if the technology/software is not implemented, upgraded or renewed. What are the consequences if the technology/software is not implemented/upgraded, or renewed? Examples: Security concerns, loss of FTES, mandates, accreditation, etc.

With increased use of our 3D printers in project-based learning curriculum, students will have less access to the technology that will be critical to their success.

Q15

What is your preferred time for implementation?

Fall 2024

Q16

Tell us how the data you have supports the implementation of the technology. This can be qualitative or quantitative in the form of surveys, observations, SLO or other assessment data, institutional research data or other reports and data.

We have been developing project-based and hands-on curriculum for students based on the hypothesis the curriculum will improve equity gaps. Over the past 5 years, we have successfully closed race/ethnicity access equity gaps with our new curriculum. Hence, we want to further our project-based and hands-on curriculum to further improve equity gaps.

Q17

4

How critical is this need in terms of supporting curriculum and services?

Q18

Respondent skipped this question

Please attach any supporting data/documentation using the "Upload" button below.

Page 3: COST ANALYSIS

Q19

Hardware

Is the request for hardware or software?

Q20

New (new to the campus)

Is the request for new or an upgrade to existing technology?

Q21

Total initial cost of request: This includes hardware and software maintenance, licence, taxes, fees, shipping, storage, etc. Contact Bryan Cooper for assistance.

Pro2 Plus 3D printer - \$5,999 +tax (currently there is a sale for \$3,999)

Pro2 Plus RaiseShield 2-year warranty+tax - \$750

Printer Cart for Pro2 Plus - \$1,199

Maintenace - \$400 a year

Total - \$8,348+tax

Costs sourced from raise3d.com

Q22

General Fund

Funding Source:

Q23

Respondent skipped this question

Please attach quote using the "Upload" button below.

Page 4: Grant Funding Source

Q24

Respondent skipped this question

Please specify the grant that will fund the technology you are requesting.

Page 5: Evaluation Plan

Q25

Evaluation. How do you plan to evaluate the technology after implementation?

Our Raise3D printers are connected to a cloud service with reports of usage for each 3D printer. Hence, we can determine the overall need filled by the additional printer. The 3D printer will be used in project-based curriculum used with the intention of helping close equity gaps, and therefore we will also correlate the 3D printer usage with changes in equity gaps.

Page 6: Type of Request

Q26

No

Is this an Off-Cycle Request (e.g., not part of the annual planning/program review process)?

Page 7: Off-Cycle Requests Only

Q27

Respondent skipped this question

What are the exigent circumstances and/or contributing factors that would qualify this request to be eligible for Off-cycle consideration? Please explain why this request cannot wait until the next annual planning cycle.

Page 8: Technology Request Process

Q28

Respondent skipped this question

How can the Technology Request process be improved for next year?

Page 9: Ready to Submit

Q29

Yes

Are you ready to submit your technology request?
