

TECHNOLOGY NEEDS ASSESSMENT APPLICATION

Fall 2019

Technology: Programs should list the technology needed to provide ongoing service or instruction, and an approximate cost of the request. *Technology that is listed in this category will be forwarded to Campus Technology Services to evaluate through their own processes.*

Name of Person Submitting Request:	Carol Jones
Program or Service Area:	Chemistry
Division:	Science
Date of Last Program Efficacy:	Spring 2016
What rating was given?	Continuation
Amount Requested:	\$2,400.00 (Surface Pro or equivalent - purchase portable laptop with digital inking ability)
Strategic Initiatives Addressed:	2. Promote Student Success 6. Provide Exceptional Facilities
Needs Assessment Resources (includes Strategic Initiatives):	https://www.valleycollege.edu/about-sbvc/campus-committees/academic-senate/program-review/needs-assessment.php

Replacement ☐ Growth ☒

- You are required to meet with Rick Hrdlicka – Director of Campus Technology Services--by WEDNESDAY, OCTOBER 9 if you are submitting a Technology Needs Request. 909-384-8656 or rhrdlicka@sbccd.cc.ca.us.**

Please provide the date of your meeting.

Meeting with Rick Hrdlicka; 09/19/2019 at 2:45-3:15 p.m. in CTS-101

- Projects that require modification to Buildings or Rooms will require a Facilities Need Request. Will this project require facilities changes?

No

- What technology-based equipment or software are you requesting?

A touch screen system (Surface Pro computer or comparable product), as well as the external keyboard and three digital pens (one for the device plus two extra), for use by various chemistry faculty (on a checkout bases) that would benefit from this technology within classrooms and laboratories that have limited whiteboard space.

- Indicate how the content of the department/program's latest Efficacy Report and/or current EMP supports this request and how the request is tied to program planning. (*Directly reference the relevant information from your latest Efficacy Report and/or current EMP in your discussion.*)

The Chemistry 2018-2019 EMP "Goals" are to "improve student success" and to "increase the number of science and engineering majors". Over the last few years (2012-2019) the Chemistry success rates have been 54-60%, the chemistry department seeks innovative ideas to improve student success. The Surface Pro will allow for a more interactive lecturing experience. Screen capture technology can be used to record processes that students often want to view repeatedly (such as arrow pushing mechanisms, complex organic structure modifications, problem-solving strategies, etc.). These devices allow a digital pen to digitally "ink" PowerPoint or PDF and can easily zoom in/out to give the instructor a larger canvas in which to connect major points in complex problems. We can also cover more complex material without worrying about the time lag needed to redraw structures. Feedback from students that have an instructor that uses a Surface Pro have all been positive. Allied health and engineering majors find this method of instruction easier to follow and more fitting with current technology to help them compete in this modern workforce.

5. Indicate any additional information you want the committee to consider (*for example, regulatory information, compliance, updated efficiency, student success data, or planning, etc.*).

- a) Our current technology and whiteboard space in laboratories and classroom is not as advantageous to the advancement of our students' ability to learn compared to neighboring campuses. Other campuses like RCC and UCR have newer lecture halls with a large whiteboard space and more advanced technology to assist in an instructors' ability to affectively teach. At RCC, all the chemistry lecture rooms have plenty of whiteboard space as well as built-in tablets that are attached to the classroom computers which allow instructors to use a digital pen to digitally ink the screen. Feedback from students indicates that this technology is of great benefit to their understanding as well as making it easier for students to follow along working math-related problems.
- b) This technology makes learning more interactive, keeps students more engaged and therefore is expected to increase success rates. The success rates at RCC for the 2014/2015 school year (most current data they had available) for introductory chemistry, general chemistry, GOB course, and organic chemistry were 57%, 73%, 72%, and 77% respectively (Dr. Leo Truttmann, Dept. Chair of Chemistry, RCC), whereas the same courses at SBVC have between 54-60% student success rates for 2012-2017. We have a similar population of students as RCC and it is likely that this technology will help our students to better learn such basic skills as note-taking as they learn how easily a lecture slide can be manipulated.
- c) This new technology will allow instructors the ability to manipulate their lecture slides and handouts in a way that can be instantly saved and allow screen capture of lecture material, such as recording the steps of a reaction so that the video of the problem can be posted online for later viewing.
- d) Many concepts in chemistry are complex and students have given positive feedback that have had instructors that have used Surface Pro's for lecture. It makes notetaking more understandable and eliminates the loss of time caused when a student asks about material that has already been covered. In current lecture formats, the instructor would have to rewrite the information again, whereas with this technology the instructor can go back to the previous digitally "inked" slide and discuss the answer and make adjustments as needed.
- e) The images are clearly visible and the ink colors are vibrant, eliminating student struggles to read the whiteboard when old dry erase markers are used.

Previous to use of this new technology, with the current computers in the classrooms instructors have been projecting an image that becomes distorted when the screen is raised to project onto the whiteboard and wall (image displays over whiteboard screen split section as well as onto the wall itself) in order to show the problem solving technology for work problems or reaction mechanisms using the whiteboard and the image projected from the LCD projector at the same time.

6. Provide a complete itemized list of the initial cost, as well as related costs (including any ongoing maintenance or updates) and identification of any alternative or ongoing funding sources. (*for example, Department, Budget, Perkins, Grants, etc.*)

*Touch screen system or Surface PC or equivalent device (projected cost of \$1500 + tax {estimate based on Microsoft Surface Pro – 12.3" – Core i5 7300U – 8 GB RAM -256 GB SSD})

*Keyboards with trackpad (\$160 plus tax) {estimate based on Microsoft Surface Pro Signature Type Cover – keyboard – with trackpad}; *Microsoft Surface Pen – stylus – Bluetooth 4.0 -platinum (3 at \$100 each + tax) – we want extra digital pens in the event the pen is lost.; *Mini DisplayPort to VGA Adapter (2 at ~\$35 each); *Laptop case (\$100); *Extra power cord (\$80)

7. What are the consequences of not funding this request?

Success Rates will likely remain around 54-60% for chemistry courses without funding of this technology. Students require constant interaction in conceptual learning and problem solving in chemistry and will struggle more often to understand concepts without this interactive media.