

TECHNOLOGY NEEDS ASSESSMENT APPLICATION
Fall 2016

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:	Jessy Lemieux
Program or Service Area:	Chemistry
Division:	Science
Date of Last Program Efficacy:	2016
What rating was given?	Continuation
Amount Requested:	\$10,000
Strategic Initiatives Addressed: (See http://www.valleycollege.edu/about-sbvc/office-of-president/college_planning_documents/documents/strategic-plan-report-working-doc-8-25-15-2.pdf)	1.114 Make better use of web content for online and traditional courses

Replacement Growth

- 1. You are required to meet with Rick Hrdlicka – Director of Campus Technology Services prior to submitting a Technology Needs Request. 909-384-8656 or rhrdlicka@sbccd.cc.ca.us. Please provide the date and time of your meeting.**

10/28/2016 at 9:00 am by email.

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

None

- 3. What technology-based equipment or software are you requesting?**

Class set of Windows 10 tablets specifically for student use during instruction within the classroom or lab.

- 4. 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.*)**

Efficacy (p. 35) & EMP: Working to improve student success (55% in Efficacy; 60% in 2015 – 2016 EMP). Chemistry is an area that builds on earlier content, and the students are expected to retain most of the information from a previous Chemistry course in the sequence. Deep mastery of chemistry includes mathematical problem solving, in addition to visualization and interpretation of molecular structures and processes relating to how bonds are broken and formed. We know that students' difficulty with this visualization and incorporation into problem-solving is contributing to the low success rate. These content areas are ones that instructors in CHEM 101, 104, 150, 151, 212, and 213 cite repeatedly as difficult for students. Many instructors direct students to online resources and videos (either shown during class or made available through Blackboard). However, we believe that if the students can actively engage with

web-based tools during a lecture, then there will be a higher likelihood of deeper learning and longer retention of the material within a course as well as across the sequence of courses.

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

Usage of tablets will allow for introduction of multiple software enhanced instructional opportunities including the following examples:

- 1) Monitoring and correction of student practices in time-sensitive laboratory settings. Software can read student input for laboratory measurements and alert student and teacher to critical errors that might otherwise be missed until after the experiment is completed.
- 2) Three dimensional visualization of molecular processes that can be manipulated by students for interactive experiences.
- 3) Real-time feedback on classroom student exercises. Software can read student responses and identify common error types and offer feedback tailored to a specific error that a student has made.

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.*)

28 tablets at a cost of \$329 each + tax & shipping = \$10,000; no other funding sources available.

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

Students require constant interaction in conceptual learning and problem solving of chemistry related material for effective learning and might struggle without a digital medium to interactively help them with their learning. This technology allows efficient, instructor-led, student learning of interactive digital content in both lecture and lab rooms without the need for new, expensive, maintenance-requiring laptops for our growing population of chemistry students.