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SEP 19 2011

JANICE NOBLE  
DEAN OF ACADEMIC SERVICES  
LAS POSITAS COLLEGE

**INSTRUCTIONAL EQUIPMENT REQUEST**

**Due in Dean/Unit Head's Office on September 19, 2011 (FALL) and March 1, 2011 (SPRING)**

The Definition of Instructional Equipment can be found in the California Community College's Budget and Accounting Manual. A copy of these definitions is on the PBC webpage:  
<http://grapevine/pbc/InstructionalEquipment.php>

Name of Requestor: Colin Schatz

Division/Unit : BCATSS

Brief title of request (equipment or materials being requested must be similar, related or part of a system. Mobile Computing Laboratory

**Request amount** (unit cost and total cost including tax and shipping.  
Please include all costs including installation, modification to existing facilities to accomodate new equipment, etc.):  
This should come from the vendor quote

Item (s) cost	\$ <u>5,410.00</u>
Tax (.00975)	\$ <u>527.48</u>
Shipping	\$ <u>0</u>
Installation	\$ <u>0</u>
Facilities Modification	\$ <u>0</u>
Other	\$ <u>0</u>
Total Cost	\$ <u>5937.48</u>

**Attach copy of quote(s), estimate(s) and requisition(s):**  
(Must attach quote & requisition; absence of either will delay processing)

**Brief description of specific equipment or materials requested and what they will be used for: (include the # pieces being requested; i.e.: 10 crayola crayons, sky blue, etc. in 250 words or less)**

5 Apple MacBook laptop computers:  
- These are durable portable personal computers with software configured (or freely upgradable) as needed for students to perform programming lab activities involving mobile application development, including iPhone application development.

These machines will be combined with 15 similar machines and a lockable mobile laptop cart already acquired, in order to support the implementation of a Mobile Application Programming course (initially offered Spring 2012) and similar future courses.

Is this in your Program Review? Yes  No

This request is an operationalized contribution to opportunities and challenges identified in our Program Review. In particular, it addresses the two overarching issues simultaneously:  
(1) Lab space. Because the availability of fixed lab space is unlikely to change in the near term, a laptop cart offers the possibility to convene a CS or CIS course in any room with sufficient seating locations, creating far greater flexibility in fulfilling the growing lab-space needs of those disciplines.  
(2) Equity, access and service to different student populations. We are currently unable to tap into broad student and community interest in iPhone application development. With the addition of flexibly-located Mac hardware into our programs, multiple opportunities are created to better serve our students and engage a more diverse population of future students.



Is it a replacement? Yes

Upgrade? Yes

New technology? Yes

Please explain?

This is additional hardware, not intended as an upgrade or replacement for existing equipment.

Following is the evaluation criteria; please see corresponding Instructional Equipment Rubric.

***Instructional and Service Impact***

How will this Item have a positive impact on instruction and/or teaching and learning in the classroom? Is this for use by the instructor or students, or both?

This equipment would be used primarily by students for work in courses. Instructors of pertinent courses would also access and use the equipment for configuration and preparation of course activities and materials.

The availability of this equipment to future course and program planning would have a substantial impact on teaching and learning. In addition to the broadened appeal of programming courses using such equipment, mentioned above, the curricular content made possible would allow a particularly robust restructuring of Computer Science course offerings and sequencing. One substantial benefit of Mac hardware, running OS X, is that it could equally easily be used for two different elective-type courses focusing on mobile application development:

(1) Mobile Application Programming: iOS. This course, already approved and scheduled to be offered Spring 2012, will provide an alternative to existing courses for students with prior programming experience – including those who have taken our core CS1 and CS2 courses but seek something other than the conventional and transfer-oriented CS20 or CS21. It would also add an additional professional programming language, Objective C, to the languages covered by our CS program, a benefit to students seeking job-related training as well as to transfer students who would benefit from fluency building and exposure to core concepts (e.g., object oriented design) across languages.

(2) Mobile Application Programming: Android. This would have similar benefits and would function as the primary course in our active offerings to focus on the Java language.

*impact on Enrollment*

**Will the equipment impact enrollment, attract or increase the number of students participating in a course or program?**

This equipment would likely have a substantial impact on enrollment. As noted above, the mobile application development course being launched in 2012 is the first of its kind offered at LPC. The capability to offer a complete programming- language learning experience that matches the popularity of and interest in iPhone applications would likely translate into substantial interest from students who do not otherwise typically enroll in current and relatively narrow CS offerings.

Beyond the specific courses mentioned above, having a laboratory set of Mac OS X machines would enable courses across entire set of CS and CIS offerings to include selected exercises and activities that expose students more fully to cross-platform (Windows, Linux, Mac) comparisons and issues.

**Access**

**How does this item promote the principles of universal design, by providing opportunities for under-represented populations & accommodate students with diverse learning styles?**

The hardware and the curricular material a mobile computing lab will enable are strongly oriented toward increased access and engagement by a wide range of students. Laptop computers that may be taken into varying spaces conform better to universal design principles than the fixed desktops available in Room 2416, the lab room typically assigned to CS courses.

The effect of different technology and curricular elements on the relative engagement of different demographics remains an open and contested question in computer science education scholarship. However, there is some evidence to suggest that programming curriculum focused on contemporary popular consumer technology can help to even out differences by gender and ethnicity categories. An additional consideration is that the overall Las Positas College campus, including the Computer Science program, tends to focus on serving transfer- oriented students; the possibilities this equipment opens up would improve outreach and service to community members with more of a focus on job-related goals

**Outcomes**

**How will this equipment enable or enhance SLOs? What are the consequences related to learning outcomes if request is not funded?**

The goal of obtaining this equipment is to offer opportunities to engage with programming concepts for those students who may find greater engagement, satisfaction or success when the tangible results of their learning and work are mobile computing applications. This would likely improve SLOs - in particular, student understanding and application of common programming structures/ concepts across multiple problem-solving tasks - for the program as a whole.

If this request is not funded, our planned course offerings in the near and medium term would move forward with current equipment of 15 laptop computers. Courses requiring student work on the Macintosh platform -- e.g., anything involving software development for iPhone, iPad or iPod Touch -- would rely more heavily on students sharing access to the small number of computers available and/or students using personal property subject to more variation in configuration and potentially more difficult to troubleshoot.

The addition of 5 computers to the existing 15 would bring our current mobile mobile cart to capacity. As future developments warrant, we will seek paths to obtaining additional resources going forward.

**Total Cost of Ownership (this is an attempt to identify what the ongoing costs of purchasing this equipment will be to the institution)**

- a) What is the lifespan of the equipment? 5 years? 10 years? 20 years?
- b) Is there sufficient current/planned space available for the storage and use of this equipment? If so, where will it be housed? If not, is there a proposed location and are there any costs associated with installation or modifications to the space?
- c) Are there operating costs and how will they be covered by the department?
- d) What will be required to maintain the equipment, such as regular servicing or upkeep? Who will perform maintenance, and what will the estimated costs be?

a) The lifespan of the computers is about 5 years. They are comparable in possible need for future upgrading to current lab computers.

b) Yes. The existing cart and its contents would fit easily in Room 2416, and these additional 5 computers will fit in the cart.

c) The operating costs consist entirely of the computers' usage of electrical power. Because they only charge when plugged in and consume less power per unit than desktop machines with external monitors, their operating costs would be less than that of existing lab computers.

d) This equipment, like any set of personal computers, would require periodical updating of software. This would be done by Computer Science instructional staff in collaboration with campus IT, and would not incur any costs beyond instructors' time. Beyond software upgrading and installing, other maintenance is not generally needed except in the event of hardware malfunction or damage. Assuming 5% of the overall value of the machines is incurred in repair costs during their collective lifespan, such costs would be approximately \$450.00, or \$90 per year of that lifespan.



*Visibility/Profile within Community*

**Is this a "flagship" item that will bring recognition/notoriety to the College or raise the stature of the program? Will it attract students and/or enhance the image of the College in the community because of its rare, one-of-a-kind status?**

The offerings that would be made possible by this equipment could serve as a "flagship" item. The popularity and increasing prevalence of iPhone applications, for instance, is well known, and other institutions have taken advantage of this. For instance, the Computer Science Department of Stanford University recently began offering an iPhone programming course, initially open to participation both by its own matriculated students and by others through iTunes University. Each quarter Stanford's course has been offered, it has been immensely popular and required a lottery/application process for students to enroll; participation has since been closed to non-Stanford students. Offering a course with similar material here would give LPC an unusual and distinctive offering for a community college, further raising our profile in the local and regional community.

How does this equipment exceed basic sustainability goals and encourage renewable resources at the College? Is the design/operation of this item in keeping with the College's commitment to sustainable practices?

Student work in Computing Studies disciplines are generally consistent with the College's commitment to sustainable practices: Our faculty routinely provide course resources – including reference material, lecture slides/notes, tutorials, lab activities and assignments - in a paperless form. When using the mobile computing lab's computers for application development, students would use simulated, "virtual" embodiments of the mobile platforms their programs are designed for (e.g., iPhone, iPod Touch, other mobile phones or PDAs).

This is a pedagogical convenience as well as a more sustainable alternative to the use of additional hardware for course work. The ecological impact of Apple hardware generally matches or exceeds that of other leading vendors – for instance, in the reuse of components, incorporation of recycled material, recycling of electronic waste and minimization/elimination of heavy metals and other toxic substances (e.g., mercury, cadmium) in hardware components.

**Health, Safety & Security**

Does this equipment address any health, safety & security concerns? If so, please explain below.

The use of laptops, if carried out correctly, offers the possibility of improved impact on ergonomic and other health issues in comparison to desktop machines. Users are more able to position keyboard and screens in ergonomically preferable positions, and can be more easily encouraged to move around during work sessions.

**Signatures (required)**

(If requesting computer-related equipment/software, LPC IT Department Review is required.)

Requested by Colin Schmitt Dean/ Unit Head

Grace Noble 9/23/11

[Signature]  
IT Department Signature

Vice President Mahge Malan 9/26/11

LPC VP Business/President \_\_\_\_\_

LPC Business Office Use (Account Number) \_\_\_\_\_

# LAS POSITAS COLLEGE Equipment, Apparatus and Service Requisition

#R

FOR REIMBURSEMENT: List payee name & ssn.

TAX ID#

SUGGESTED VENDOR

NAME OF STAFF MEMBER  
Colin Schatz

DATE WRITTEN  
19-Sep-11

DATE REQUIRED  
1-Jan-12

DIVISION/ DEPARTMENT  
BCATSS

For inventory purposes include room # where equipment will reside: 2416

FOR OFFICE USE ONLY

RETURN COPY of REQUISITION TO:

DESCRIPTION (PRODUCT, TYPE, SIZE, COLOR, STOCK NUMBER)

UNIT

QTY

UNIT PRICE

TOTALS

Apple MacBook MC516LL/A EA 5 \$899.00 \$4,495.00

AppleCare Plan S3130LL/A EA 5 \$183.00 \$915.00

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\$5,410.00

\$527.48

FREE

Shipping (if available):

0.0975

TOTAL COST \$5,937.48

Original invoices and receipts must be attached for payment. Include current taxes unless incorporated in price.

ACCOUNT #

FUND ORG ACCT PROGRAM

Business Office

APPROVALS

Supervisor/ Coordinator/ Director

*James J. ...*  
Dean/ VP/President

*Reverend S. ...*



From: confirmation@apple.com  
Subject: **Your Apple Store Proposal**  
Date: September 19, 2011 9:27:38 AM PDT  
To: sgunderson@gw5mail.clpccd.cc.ca.us  
Cc: colin.schatz@gmail.com  
Reply-To: confirmation@apple.com

Dear Apple Customer,

Thank you for preparing a proposal/quote using the Apple Online Store for Education Institutions.

Thank you for choosing Apple!

The Apple Online Store Team

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There are four ways to purchase from the Apple Online Store for Education:

1. Work with your institutional Apple Authorized Purchaser to place an order on your behalf or if you are authorized to place orders for your institution, register as an authorized purchaser at this link:
  - a. Register to become an authorized K-12, college or university purchaser here:  
<<http://gra.apple.com/GRAViewer/pages/Viewer/PreRegistration.faces?appld=81&login=no>>
2. Fax in your purchase order toll free to 1-800-590-0063.
3. Contact Apple Education Sales Support toll free at 1-800-800-2775 to place your credit card or PCard order.
4. Mail your purchase order and attached quote/proposal to:  
Apple, Inc.  
12545 Riata Vista Circle  
M/S: 198HE  
Austin, TX 78727

For additional assistance with your order, please call Apple Education toll free at 1-800-800-2775.

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Here is a summary of your proposal/quote:  
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PROPOSAL DATE: 19 September 2011

WEB PROPOSAL NUMBER: W72263525

#### CUSTOMER INFORMATION

Colin Schatz  
Las Positas College  
colin.schatz@gmail.com  
(510) 380-8268

#### PURCHASE INFORMATION

Part Number: S3130LL/A  
Product Name: AppleCare Protection Plan for MacBook Air/MacBook - Auto Enroll  
Unit Price: 183.00  
Quantity: 5  
Net Price: 915.00  
Estimated Shipping In Stock

Part Number: MC516LL/A  
Product Name: MacBook 13-inch, 2.4GHz Intel Core 2 Duo - White  
Unit Price: 899.00  
Quantity: 5  
Net Price: 4,495.00  
Recycling Fee: 30.00  
Estimated Shipping 3-5 business days

SUBTOTAL: 5,410.00

Total does not include any applicable sales tax.  
Promotion Savings are subject to verification.

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