EQUIPMENT NEEDS ASSESSMENT APPLICATION

Name of Person Submitting Request:	**Todd Heibel**
Program or Service Area:	**Geology-Oceanography (Earth Sciences)**
Division:	**Science**
Date of Last Program Efficacy:	**Spring 2012**
What rating was given?	**Continuation**
Equipment Requested	**Four (4) Digital Balances – Ranked Sixth**
Amount Requested:	**$2,400 (4 Digital Balances @ $600 each)**
Strategic Initiatives Addressed:	Access, Institutional Effectiveness, and Student Success

Replacement ☐ Growth ■

1. Provide a rationale for your request.

At present, the Geology-Oceanography Department does not possess any digital balances. The department's mechanical balances are in dire need of repair and are largely unusable within lecture and laboratory exercises and demonstrations. It is possible to borrow equipment from other departments. While borrowing equipment is certainly one strategy that can be employed, it is not practical for long-term planning and program success. In addition, this strategy can only be used on a very limited basis and transport of sensitive equipment from one area to another risks damage.

While this is unfortunate for any physical science program, it is especially problematic for this program. The course outline of record for all SBVC geology and oceanography laboratory courses implies the use of balances. Specifically, with recent curricular updates, the use of balances is central to Physical Geology, Historical Geology, Mineralogy, and Oceanography laboratories. It is disingenuous to offer these courses without proper balance use and runs counter to the mission of the college and accreditation standards. Furthermore, deprived of the use of balances, students will be at a disadvantage when transitioning to four-year programs of study, as well as entry- and advanced-level geo-technician and geo-science careers.

Although more expensive than traditional mechanical balances, digital balances are more durable and "fool proof" in the long term. In addition, most four-year institutions and geo-technical labs utilize digital balances.

2. Indicate how the content of the latest Program Efficacy Report and current EMP data support this request. How is the request tied to program planning? *(Reference the page number(s) where the information can be found on Program Efficacy.)*

Within the Geology-Oceanography Program Efficacy report, please refer to the "Three-Year Plan" (p. 30) and "Challenges" sections (p. 31). Although not explicitly addressed, the incorporation of balances will allow the department to implement its three-year (and longer) plan and meet the challenges of teaching a full suite of rigorous lecture and laboratory courses.

Within the EMP document "Action Plan" section, both Geology and Oceanography programs include a need for additional equipment. Classroom balances are a central component within this

equipment need. In addition, student success, retention, persistence, and access benefit with increased instructional integrity.

3. Indicate if there is additional information you wish the committee to consider *(for example: regulatory information, compliance, updated efficiency, student success data, or planning, etc.).*

As previously mentioned, the updated course outlines of record for all geology and oceanography laboratory courses imply the use of balances within laboratory exercises. To deprive students of hands-on use of balances runs counter to stated course objectives and course content. In addition, students who wish to transfer to four-year institutions will be expected to understand the basics of balance use within upper-division geology, oceanography, environmental, and Earth science courses. Students who wish to enter the job market will also be expected to know how to use a balance. Please refer to the labor market information below. These career opportunities will be foreclosed to students who are not properly prepared (including proper balance use):

Occupation:	Mean Hourly Wage:	Annual Average Openings:
Geological and Petroleum Technicians	$39.23	80
Geoscientists	$46.63	260

Source: State of California Employment Development Department (2013).

4. Evaluation of 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 or Perkins)

The cost estimate per balance ($600) is actually quite low and will purchase a basic, digital balance. In addition, only four (4) balances are requested. In order to address institutional effectiveness, students will share these balances in groups of six to ten (depending on overall class size). Moreover, these balances resources could be shared with the neighboring Geography Department, further extending their efficiency and utility.

It is anticipated that only minimal ongoing maintenance will be necessary in order to extend the life and cost effectiveness of the digital balances. It is estimated that three-year maintenance costs will average $200 every three years ($50 per balance every three years).

Unfortunately, the current department budget is insufficient to support maintenance costs. It will need to be supplemented. Because Geology-Oceanography is not considered a CTE program, it does not qualify for Perkins funding. It is possible to solicit grant funds, but no grants have been identified for this purpose to date.

5. What are the consequences of not funding this equipment?

If these balances are not purchased and incorporated into the geology-oceanography curriculum, then the course outlines of record will be violated, students will not be appropriately prepared for transfer to four-year programs, and students will not qualify for well-paid positions within the geo-technical and geo-science sectors.