

EQUIPMENT NEEDS ASSESSMENT APPLICATION
Fall 2015

Name of Person Submitting Request:	Michael Lysak
Program or Service Area:	Physics/Astronomy/Engineering
Division:	Science
Date of Last Program Efficacy:	Spring 2011
What rating was given?	Continuation
Equipment Requested	15 Tektronix Oscilloscopes TBS-1102B-EDU, 100 MHz, @ \$1090 = \$16350
Amount Requested:	\$16350
Strategic Initiatives Addressed: (See Appendix A: http://tinyurl.com/15oqoxm)	Institutional Effectiveness and Resource Management; Student Success; Technology

NOTE: To facilitate ranking by the committee, submit separate requests for each item; however, multiple items can be submitted as one request if it is required that the equipment is packaged together.

Replacement Additional

1. Provide a rationale for your request.

The present Physics/Astronomy labs are using equipment that is quite a number of years old, and, with increased use, more of this equipment is falling into disrepair. None of our present labs use modern technology with respect to computerized data acquisition and analysis; our advanced labs use some digital multimeters and timers to perform the labs; although there is much inherent value in the students' using analog measurement methods with devices such as stopwatches, meter sticks, thermometers, calipers, micrometers, and balances, more of the labs should have digital data acquisition capabilities in order to introduce the students to more modern lab measurement methods. The digital Tektronix Oscilloscopes would be an asset for all the advanced labs, as the students at the advanced levels could more effectively make measurements in the Physics labs involving studies and investigations in electricity and magnetism. These digital Tektronix Oscilloscopes, combined with the other data acquisition equipment that we presently use, would greatly improve our overall laboratory program.

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.*)

One of the goals of the Physics/Astronomy Department as stated in the EMP is to "Update the Physics/Astronomy labs and their related equipment needs". Further, on pg. 19 of the Physics/Astronomy Program Efficacy Report of Spring 2011, it states that "In our Physics/Astronomy labs, the department has begun to incorporate digital scales and digital electric multimeters to improve accuracy and facilitate learning; more equipment and lab updates are planned...", and "The department is continuing the exploration of the use of Fourier Systems Data Logging Kits in the Physics and Astronomy labs if funding becomes available." The Physics/Astronomy department has successfully incorporated digital multimeters in our advanced Physics for life-science and majors courses, Physics 150B and Physics 201; the present oscilloscopes that the Department uses in its advanced labs are very, very old and are rapidly falling into disrepair; the Department would like to make use of the digital Tektronix

Oscilloscopes in our advanced Physics courses/labs so that students will have the advantage of being able to make lab measurements in the electricity and magnetism labs with more accurate and more reliable electrical testing lab equipment. With these lab equipment improvements, the Department will be in a better position not only improve the present advanced Physics labs, but also to choose future appropriate equipment to be able to further update our Physics and Astronomy labs, both at the introductory and advanced course levels.

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

The Science Division had ranked this Equipment request as 3rd of all the Science division equipment requests in Fall of 2015.

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, Perkins, Grants, etc.*).

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

Without the new equipment, the Physics/Astronomy program will suffer as many of our labs will continue to be outdated, more present labs will fall into disrepair, and students will not have the opportunity to experience modern lab measuring and data acquisition techniques.