**Unit Goal Revisions**

**Math, Engineering, & Science - Shelby**

**2016 - 2017**

**Name of Program/Department: Math, Engineering, & Science Division - Shelby**

**Revised Unit Goals**

**Goal 3: Purchase new equipment to enhance laboratory instruction and dispose of chemical waste from labs.**

**Objectives:**

1. Remove chemical waste to prevent buildup of toxic material and ensure that items are disposed of properly.
2. Purchase of a new equipment for chemistry laboratory.

**Methods of Assessment**

1. The waste disposal pick up will be initiated and monitored by both the lead chemistry instructor, and lab coordinator, Lisa Nagy and Preston Wallace, respectively.
2. Several chemistry laboratory exercises require the use of equipment that yields results that are used for analysis and reporting purposes. Several pieces of equipment are in poor condition and need replacing. Laboratory exercise results, as well as feedback from the instructors and students, will be used as a method of assessment.

**Additional Funding Requests**

1. Waste Disposal Pick up for all campuses

Tradebe (waste disposal company) – estimated cost $2000.00

1. Analytical Balance- Mettler Toledo New Classic MS Analytical Balance

Fisher (Model # 01-910-200)

Total Cost: $3822.00

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| **Vernier Software and Equipment Request** |
| **Description** | **Quantity** | **Unit Price** | **Total Price** |
| **Vernier Labquest 2** | **6** | **329.00** | **$1974.00** |
| **Ph Senor** | **6** | **79.00** | **$474.00** |
| **Pressure Sensor 400** | **6** | **189.00** | **$1134.00** |
| **Vernier UV-VIS Spectrophotometer** | **1** | **1999.00** | **$1999.00** |
| **Voltage Probe** | **6** | **12.00** | **$72.00** |
| **Vernier Drop Counter** | **6** | **99.00** | **$594.00** |
| **Orp Sensor** | **6** | **81.00** | **$486.00** |
|  |  |  | **Total Price: $ 6733.00** |
|  |  |  | **Shipping: $ 40.17** |
|  |  |  | **Estimated Tax: $437.65** |
|  |  |  | **Total: $7210.82** |

**Goal 5: Purchase a set of scientific calculators for the math department for student use.**

**Objective:**

1. Provide departmental approved calculators to students for use in the classroom when they do not have calculators that meet specifications.

**Method of Assessment:**

1. Instructors will be required to check out calculators from the office manager and she will approve and manage distribution and return of the equipment.

**Additional Funding Request:**

1. TI30XA (QTY- 20) and TI30XIIS (QTY -20)

Total: $439.00

**Goal 4: Enhance the teaching and learning process for math students through the purchase of new technology.**

**Objective:**

1. Improve methods of formal and ad hoc classroom lecture recordings.
2. Establish a High Definition library that would serve as online tutorials for all math students.

**Method of Assessment:**

Faculty and students would provide qualitative feedback about their experiences using the technology both in and out of the classroom. Quantitative data will be obtained by conducting a pilot study that compared students who accessed and used the online tutorials versus those that did not use the online tutorials as supplemental instruction.

**Additional Funds Requested**

Math faculty have requested the purchase of Apple I-pads, Berm Kickstand Portable Projector, and associated applications.

* + Apple IPad Air 2 128GB - $699
	+ Bēm Kickstand Portable Projector - $499.95
	+ Presentation Recorder App - $3.99
	+ UPAD App - $4.99
	+ Educreations App = $99
	+ Total $1,306.93 X 8 = **$10,455.44**

By providing students with an external supplemental resource they can receive additional support that will help students acquire math content knowledge.

**Goal 3: Offer Physics courses on the Shelby campus.**

1. **Objectives**
2. Upgrade the Physical Science laboratory (room 115) in the Math and Science building in an effort to begin offering Physics classes at the Shelby campus.
3. Purchase equipment from Vernier
4. **Method of Assessment**
5. Coordinate with the Dean of Legal Services and Buildings to provide the necessary modifications to the lab space conducive for a quality physics lab.
6. Monitor the purchase and installation of equipment, while also obtaining feedback from the faculty using the equipment for instruction.
7. **Additional Funding Requests**
8. Computer Stations: 8 computer stations requested. Old computers would be acceptable with new computers being purchased only if necessary. (Funding request pending)
9. The itemized list below contains the equipment necessary for one station. Eight stations will be needed for instruction
	1. Total Cost: $1064 X 8 = $8,512.00

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| **Interface and Sensors** | **Order Code** | **DeluxeLQ2-PHY-DX** |
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| [LabQuest 2](http://www.vernier.com/products/labq2/) | LABQ2 | $329 |
| [Motion Detector](http://www.vernier.com/products/md-btd/) | MD-BTD | $79 |
| [Dual-Range Force Sensor](http://www.vernier.com/products/dfs-bta/) | DFS-BTA | $109 |
| [Microphone](http://www.vernier.com/products/mca-bta/) | MCA-BTA | $39 |
| [Differential Voltage Probe](http://www.vernier.com/products/dvp-bta/) | DVP-BTA | 2 x $39 = $78 |
| [Low-g Accelerometer](http://www.vernier.com/products/lga-bta/) | LGA-BTA | $89 |
| [Light Sensor](http://www.vernier.com/products/ls-bta/) | LS-BTA | $55 |
| [Photogate](http://www.vernier.com/products/vpg-btd/) (2) | VPG-BTD | 2 x $45 = $90 |
| [Ultra Pulley Attachment](http://www.vernier.com/products/spa/) | SPA | $24 |
| [Picket Fence](http://www.vernier.com/products/pf/) | PF | $7 |
| [Stainless Steel Temperature Probe](http://www.vernier.com/products/tmp-bta/) | TMP-BTA | $29 |
| [Magnetic Field Sensor](http://www.vernier.com/products/mg-bta/) | MG-BTA | $58 |
| [Current Probe](http://www.vernier.com/products/dcp-bta/) (2) | DCP-BTA | 2 x $39 = $78 |
|  | **$1,064** |

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