# CHARGES FOR TECHNOLOGY

- **Modified (see changes below)**
- **Accepted as submitted**

**Date Approved**

Page __1__ of __3__

## ORIGINAL PROPOSAL—FY15

**Department**: Mathematics

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Item/Class where item will be used</th>
<th>Cost/Item</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Annual server cost for WeBWork (155, 160, 161)</td>
<td>$400.00</td>
<td>$1200.00</td>
</tr>
<tr>
<td>600</td>
<td>Student Hourly in Weber 205/206</td>
<td>$8.87</td>
<td>$5322.00</td>
</tr>
<tr>
<td>58</td>
<td>Matlab Renewals for PD’s: Weber 205: Basic Matlab And Toolboxes</td>
<td>$22.00</td>
<td>$1276.00</td>
</tr>
<tr>
<td>1</td>
<td>Maple License: University license is $10,000; Tech Fee pays $3000, Math Department pays $2000</td>
<td>$3000.00</td>
<td>$3000.00</td>
</tr>
<tr>
<td>58</td>
<td>SEP Antivirus renewal, 1 years</td>
<td>$4.00</td>
<td>$232.00</td>
</tr>
<tr>
<td>15</td>
<td>PC’s for student use: Weber 205 replacements</td>
<td>$1500.00</td>
<td>$22500.00</td>
</tr>
<tr>
<td>15</td>
<td>Windows 7 Licenses</td>
<td>$60.00</td>
<td>$900.00</td>
</tr>
<tr>
<td>15</td>
<td>Office 2013 licenses</td>
<td>$60.00</td>
<td>$900.00</td>
</tr>
<tr>
<td>26</td>
<td>Matlab licenses for NESB B302</td>
<td>$22.00</td>
<td>$572.00</td>
</tr>
<tr>
<td>26</td>
<td>InspireData licenses for NESB B 302</td>
<td>$80.00</td>
<td>$2080.00</td>
</tr>
<tr>
<td>3</td>
<td>Back up discs for MATHSTAT3 and PACe Servers</td>
<td>$200.00</td>
<td>$600.00</td>
</tr>
<tr>
<td>20</td>
<td>PCs for PACe Center (Math 117-126)</td>
<td>$1000.00</td>
<td>$20000.00</td>
</tr>
<tr>
<td>1</td>
<td>Paper (12 boxes) for Weber 205</td>
<td>$500.00</td>
<td>$500.00</td>
</tr>
<tr>
<td>1</td>
<td>Supplies such as cables, mouse pads, repair kits, toner cartridges, video cards, and motherboard repair</td>
<td>$1050.00</td>
<td>$1050.00</td>
</tr>
</tbody>
</table>

**Grand Total**: $60,732.00

---

**Department Head/Chair**: ____________________________

**College Council President**: ____________________________

---

**Student Representative/Organization or Club**: ____________________________

**College Council Faculty Adviser**: ____________________________
Annual Server Cost for WeBWorK: $1200.00
Math 155, Math 160 and Math 161 have moved to utilizing WeBWorK for online homework problems. The benefits are that the students receive instantaneous feedback on their homework, and more problems can be assigned as reduced budgets have limited the resources for grading paper homework. We are using hosting provided by the MAA, which will run $200 per course per 6 months, and is cheaper than renting server space and hosting ourselves. All three courses are offered fall, spring and summer.

Student Hourly in Weber 205: $5322.00
Weber 205 is the Mathematics Department’s computer laboratory. The lab is kept open four nights per week to allow for more student access. Students are hired to monitor the lab. The primary responsibilities of these students will be security. We try to hire students who can also help with Matlab (the most often used package of the Mathematics Department). We are asking for the $5322 we will spend. This money also keeps Weber 206, the Statistics lab, open too. It should be noted that the position of monitor for the lab is a highly specialized position. It is generally difficult to find a work-study student for these positions. (The $8.87/hr is an estimate.)

License Renewals: $4508.00
Matlab: Matlab is the package used most often in the Mathematics Department. Matlab is used in M160, M161, M340, M350, M351, M435 and sometimes in M369. Any student enrolled in our courses can obtain an account on the machines in Weber 205 and Weber 206. The license renewals are for 82 laboratory licenses and licenses for the Toolboxes (Sim Link Toolbox, Extended Symbolic Toolbox, Optimization Toolbox and the Partial Differential Equations Toolbox), all in Weber 205 and Weber 206 and Weber 13(new undergraduate lounge). (Matlab is put on the machines in both Weber 205 and 206 so that we can use both labs when necessary.)
Maple: The Department of Mathematics pays part of the University license for Maple. Maple is used in M161, M340, M350, M351 and M435 (not as commonly as Matlab). Since the university license allows Maple to be put on any university computer, this purchase of this license surely allows the use of Maple in other non-mathematics classes. We are asking to pay $3000 of the Mathematics Department’s share of license.
Antivirus: 1 year renewal

Workstations and Software: $24300.00
Each year we try to rotate out some of the older machines from Weber 205. This proposal will provide 10 new PC’s for the laboratories. It’s time to start accumulating Office 2013 so that we are able to upgrade all the computers without bearing the entire cost in one year.

PC’s: $20000.00
We are asking for 15 new PCs to continue replacing older machines in the PACe Center. (If there is less money than predicted, we would request fewer computers.)
Licenses for NESB B 302: $2652.00

NESB B302 features sciplexes computer-weblab workstations designed by Prof. Stephen Thompson (Prof. of Chemistry). Each sciplex has built-in natural gas, compressed air, light box, electrical, and vacuum utilities as well as a built-in desktop computer (upgraded in 2011). This setup allows for innovative teaching that integrates theory and experiment. (The computers, but not any of the rest of that, are available in Weber 205/206.)

Courses that would benefit:
*Math 455: Mathematics in Biology and Medicine
This course was taught by P. Shipman in Fall 2011, and materials were developed so that students could design and analyze mathematical models for experiments that they do (in or out of) class. Experiments were done in NESB B302, but unfortunately mathematical software was not available on the computers in that lab. This severely limited the integration of theory and experiments and prevented some course projects from being developed.

Some other courses that we expect would make use of the unique wetlab/computer lab features of NESB B302 if Matlab (and InspireData) were installed on the machines are:
*CBE 332: Heat and Mass Transfer (having Matlab in NESB B302 would facilitate an interaction between faculty in chemical engineering, chemistry, and mathematics to develop integrative courses)
*new sections of Math 160 that might be developed for electrical engineering majors
*Math 255: Calculus for Biological Scientists II
*Math 345: Ordinary Differential Equations.
*Math 332: Partial Differential Equations
*Math 331: Introduction to Mathematical Modeling
*Math 435: Projects in Applied Mathematics
*EDUC 464: Math Methods

The lab would also be used by students in independent research projects associated with the Laboratory for Mathematics in the Sciences (NESB B338), which is a partner in TILT's Course Redesign Competition. We also expect that other courses in engineering would make use of the facilities, and as part of the redesign competition, we will make course redesigners aware of the potential. Engineering faculty have mentioned also that the availability of Matlab would make NESB useful.

This proposal has the support of Andrew Warnock, the Director of the CNS Education and Outreach Center. The lab is open outside of class times- students do have access when class is not in session.

Back Up Discs: $600.00 The discs will provide back up for the Weber computer labs and the PACe center.

Paper: $500.00 With the department facing budget cuts, we’d like to get tech fee to cover the paper usage for Weber 205. All paper purchased would be used in these computer labs only.

Fund for miscellaneous supplies/repairs: $1050.00
Occasionally we need to replace mouse pads, mice, video cards etc. Also, if repairs need to be made or if cables are needed to install new equipment, it would be nice to be able to use tech fee funds. All purchases would be put toward the Weber 205/206 computer labs. Weber 205 goes through about 10 toner cartridges each year, so if nothing else, at approximately $145/cartridge, we’ll spend the majority of this on toner cartridges.