Instructional Equipment

CHEM-2011

This section will be filled out by faculty and reviewed by the Department Chair, the ARea Dean, the Instructional Equipment Committee, IPC and Budget.

Please enter items that will be used over a period of semesters BY STUDENTS. (Note: These should be NEW items that you are requesting one time only - not ongoing or consumable. Ongoing and consumable requests go under "Other Instructional Equipment". Technology-related requests should go under "Technology Requests".

Select whether the item is less than or more than $200 each. If you are a large discipline with several areas, please include which area this item is for. Include Tax, Shipping and Handling in the total cost for each item.

Importance:
• 'A' means that your discipline cannot teach your course(s) without the requested equipment.
• 'B' means that your course(s) would be greatly enhanced with the requested equipment.
• 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
In addition, how many times have you requested this item, but you have not received it?

I. Instructional Equipment/Materials Requirements

<table>
<thead>
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<th>To Support Annually:</th>
<th>Discipline Category</th>
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<td></td>
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<td>B</td>
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<td>650 Students Each</td>
<td>Chemistry</td>
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Description and part number for ordering:
MS Series Analytical and Precision Balances, METTLER TOLEDO 420g Precision balance VWR catalog # 97035-628

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One-time expenses: (e.g. construction, electrical, installation)

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)
1. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

Students in chemistry use the balances every day from the second week of class to the 16th week of class.
Balances are the most used item in the chemistry lab beside common glassware such as beakers etc.
Balances get spilled on. A Lot. We try to keep them clean, we service them regularly, and many of our balances are 15 or more years old. But eventually they stop working. We are down to a critical number of balances. We can still function, but in a few short years the line of students waiting for a working balance will continue to grow. Since these can be funded by the bond it might be a good idea to get them now.
Bond Fundable.

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?
succeed in a series of courses?

They can weight things. That is useful in chemistry!

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

5. Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Importance</th>
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Description and part number for ordering:
VWR Ceramic Top Hot Plate Stirrer with Temperature Control Package VWR catalog # 33993-904

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One-time expenses: (e.g. construction, electrical, installation)

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)

1. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)

2. Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

In chemistry many of the experiments we perform are synthetic transformations/chemical reactions. Many of these require energy in order to initiate the reaction. Countless, seriously COUNTLESS experiments have been destroyed, especially in the organic chemistry sequence of classes, by cooking the experiment resulting in a nice batch of charcoal, or under heating resulting in no reaction at all. These temperature controlled hotplate stirrers have been used for years in graduate level and industry and are now are finding widespread use in undergraduate labs. Addition of these will be a huge advancement in efficiency in the laboratory. We will begin asking for 10 for the organic chemistry lab (which will accommodate 20 students).

Bond Fundable

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

Students will be able to carry out cutting edge and classic organic chemistry synthesis experiments leading to a far greater understanding of hands on chemistry.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

Given that we have no temperature controlled hotplates all students will benefit. These will be used mostly in the organic labs, but can be shared throughout the discipline. Over time we would like to build the inventory of these useful devises.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

Understanding of synthetic laboratory protocol. Assimilation of classroom lecture, structure function and mechanism training with hands on experimentation.

5. Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Importance:</th>
<th>Priority:</th>
<th>To Support Annually:</th>
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<td>Under $200</td>
<td>700 Students Each</td>
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Description and part number for ordering:
TI 84 graphing calculators

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One-time expenses: (e.g. construction, electrical, installation)

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)

na

Item to be shared with the following Department/Program: (Include any shared expenses)

Could be used with biology.

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)
1. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)

To this equipment required to meet state level state of Federal Health and Safety Code. 5 Revised, Item 9 (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

We have a number of vernier data acquisition probes that can be coupled with certain Texas Instrument graphing calculators. However we only have 9 of these calculators so students must share. For college chemistry classes this is not in the best interests of student learning as acquiring data is one of the fundamental skills of a scientist.

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

See above.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

We serve about 650 students per year. About 2/3rds of them will benefit from the purchase if these calculators.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

Performing laboratory experiments, gathering relevant data, analyzing data. Scientists of been gathering and analyzing data for millennia, these calculators are just one of the tools we use to teach this fundamental skill.

5. Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
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Description and part number for ordering:

Education Series EL20 Benchtop pH/ORP/Temperature Meter, METTLER TOLEDO® VWR catalog # 97002-294

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One-time expenses: (e.g. construction, electrical, installation)

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)

1. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

Currently we only have 2 benchtop pH meters. We do numerous experiments each term which require students to take an accurate pH of a solution. In a lab of 24 the line gets LONG. When two labs are running concurrently so that each lab only has one meter, the lines get REALLY LONG.

Bond Fundable

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

Students can actually do chemistry instead of wait in line for the pH meter.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

It is just a useful lab item. It is shameful that we only have two. The outcome is that they get to use one of the most fundamental pieces of equipment in all of chemistry.

5. Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
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| One-time expenses: (e.g. construction, electrical, installation) |

| On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades) |

| Item to be shared with the following Department/Program: (Include any shared expenses) |

<table>
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<th>Do you have space for this equipment?</th>
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Justification for Item (See Rating Rubric)
Justification for Item (See Rating Rubric)

1. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

In chemistry many of the experiments we perform are synthetic transformations/chemical reactions. Many of these require energy in order to initiate the reaction. Countless, seriously COUNTLESS experiments have been destroyed, especially in the organic chemistry sequence of classes, by cooking the experiment resulting in a nice batch of charcoal, or under heating resulting in no reaction at all. Our current set of hotplates are very old and there is never enough for the students. Often three students have to share a hotplate. These hotplates can be upgraded at a later date to temperature controlled hotplates by addition of the temperature accessory package.

Bond Fundable.

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

Students will be able to carry out cutting edge and classic chemistry experiments leading to a far greater understanding of hands on chemistry. More individuals and groups of two can do experiments simultaneously as opposed to groups of 3 or 4.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

More students will actually have hands on experience which is fundamental to the teaching lab.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

Knowledge of and ability to perform experiments, collect data and analyze results will be enhanced greatly by allowing more students to actually do the experiments.

5. Additional Justification for this item:

I. Instructional Equipment/Materials Requirements

<table>
<thead>
<tr>
<th>Importance:</th>
<th>Priority:</th>
<th>To Support Annually:</th>
<th>Category</th>
<th>Discipline Area</th>
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Description and part number for ordering:
Pyrex melting point tube, Corning VWR catalog # 89091-274

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One-time expenses: (e.g. construction, electrical, installation)

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)

1. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

Characterization of organic compounds is done through a variety of techniques. One of the fundamental techniques required by every peer reviewed journal in organic synthesis is the melting point of any isolated natural product or synthesized compound. Digital melting point apparatus are prohibitively expensive for the undergrad lab (a common melting point devise that can do 3 samples at a time costs between $5000 and $7000). Because of this we use Theil tubes, r melting point tubes. Currently all organic chemistry students have to share Theil tubes. Since temperature can go as high as 200 degrees C often times students can not finish their experiments in the 3 hours allotted for a lab period because they are waiting for a tube to become cool enough to handle. Addition of the above requested item will help to solve this problem.

Bond Fundable.

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

Students can do the fundamental process of taking accurate melting points of organic compounds as required in the course outline and by the American Chemical Society.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

5. Additional Justification for this item:
I. Instructional Equipment/Materials Requirements

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Description and part number for ordering:
Vernier pH sensor Order Code PH-BTA

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One-time expenses: (e.g. construction, electrical, installation)

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)

1. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

These sensors are used with our Vernier data collection devises. pH sensors are fairly sensitive items and over the years they do get damaged. If we in fact receive the data collection calculators requested above, the 10 additional pH sensors will allow a full advanced chemistry class to monitor reaction or environmental pH without having to wait for a meter to be freed up. It will significantly improve what we can do inside and outside of the laboratory environment.
Bond Fundable

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?
   Yes. Yes.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?
   More students will have hands on experience with a very common and essential piece of lab equipment, the pH meter, instead of just watching someone else do it.
   You can not learn to ride the bike by watching. Eventually you have to get on the thing.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

5. Additional Justification for this item:
I. Instructional Equipment/Materials Requirements

Importance: A
Priority: 05

To Support Annually: Category Discipline Area
Over $200 250 Students Each Chemistry

Description and part number for ordering:
Corning 476086 temperature compensation pH Meter electrodes

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Total: $563.00

One-time expenses: (e.g. construction, electrical, installation)

On-going Expenses: (e.g. maintenance, repairs, staffing, and/or upgrades)

Item to be shared with the following Department/Program: (Include any shared expenses)

Do you have space for this equipment? Yes

Justification for Item (See Rating Rubric)

1. Is this equipment required to meet Title 5 and/or Ed Code? If so, how? (Cite code)

Is this equipment required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

For the college level chemistry classes (as opposed to pre-nursing and intro classes) these specialized pH electrodes compensate for temperature variations in the sample. We used to have these and have designed labs around their use but after years of wear and tear and no budget for equipment replacement or maintenance they are no longer functioning. Replacement with these newer, more rugged probes would greatly enhance the learning experience of the students in general college chemistry.

Bond fundable

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

yes/ yes/

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

5. Additional Justification for this item:
Technology Requests
Part I : Software

CHEM-2011

I. Technology/Software Requests

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

Importance:
• ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
• ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
• ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

In addition, how many times have you requested this item, but you have not received it?

<table>
<thead>
<tr>
<th>Importance</th>
<th>Priority</th>
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<th>Category</th>
<th>Discipline Area</th>
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Description and part number for ordering. Please include system requirement.

Chemdraw Ultra 12.0 Suite Window 7 or Mac OsX10.5

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Type

College-wide

Discipline-Specific

New

Out-of-class Assignments

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)

1. Is this software required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this software required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

Chemistry is taught by taking the "un-seeable" and making in seen to the students. Molecules are visualized using dots for electrons, letters for atoms and lines for bonds holding said molecules (and us) together. Significant advancement in the known structures, 3D shapes, hybridization, polarity which ultimately lead to structure and function of molecules has been achieved over the last many decades. In order for us to accurately share this knowledge with students we need to be able to reproduce images not only in the classroom, but also on homework assignments, lab books, study guides and exams.

The leader in accurate molecular drawing software is Cambridge software’s ChemDraw.
This software is used to create lab book, assignments and exams. It will be used in the future for those tasks as well as creating study guides, and further problem sets for students throughout the curriculum.

Dr. Loeser and Dr. Kelly have both purchased ChemDraw out of their own pockets early in their careers at College of Marin. Now however the software is too old to run on the computers they use. (I, Dr. Kelly, can only draw one molecule at a time and have to quickly copy and past it to a word document before the program crashes. Given that one a single assignment or exam I may draw 100 or more molecular structures this is, a, bummer at best!)

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

Students will be able to understand the true three dimensional structure of molecules. From this one begins to understand the absolute structure in terms of not only shape but polarity and ultimately the possible function in a biologic system or reactivity in a synthetic system. This knowledge is fundamental and essential.

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

See above.

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

See above.

5. Additional Justification for this item:

I. Technology/Software Requests

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

Importance:
• ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
• ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
• ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
In addition, how many times have you requested this item, but you have not received it?
Importance: Priority: To Support Annually: Category Discipline Area
A 02 650 Students Discipline-Related Software Chemistry

Description and part number for ordering. Please include system requirement.

Biodraw 12.0 Suite Windows 7, Mac OsX 10.5

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Type College-wide

Discipline-Specific

Out-of-class Assignments

Item to be shared with the followng Department/Program: (Include any shared expenses)

Biology

Justification for Item (See Rating Rubric)

1. Is this software required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
   Is this software required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)

This is a supplemental program to chemdraw. The software that contains them both has a number of other items we do not need and costs nearly $3000 dollars. Biodraw + Chemdraw that was requested earlier would cover the needs of chemistry most likely biology in terms of molecular structure and biochemical pathway drawing for years to come. See justification for Chemdraw. The same apply here.

2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?
5. Additional Justification for this item:
Technology Requests
Part II : Hardware for Lab and Classroom

I. Technology Requests-Hardware for Lab and Classroom or other student use

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, IPC and Budget.

Importance:
• ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
• ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
• ‘C’ means that you would like this piece of equipment for your course(s) but can wait for a future academic year.
In addition, how many times have you requested this item, but you have not received it?

<table>
<thead>
<tr>
<th>Importance</th>
<th>Priority</th>
<th>To Support Annually</th>
<th>Category</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>01</td>
<td>4000 Students</td>
<td>Other</td>
<td>Chem, Phys, Geol, Geog, Engg, Bio</td>
</tr>
</tbody>
</table>

Description and part number for ordering:
Approximately 50 new computers will be needed for the new and old science center labs. The current computers in the science center are in high demand (more than 4000 students from classes and walk-ins) and are woefully out of date. The cost and further justification will be coming from the computer science tech and other departments. We just wanted to voice our support and stress the need for these new computers.

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Unit Cost:</th>
<th>Tax:</th>
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<tr>
<td>50</td>
<td>$47,000.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$2,350,000.00</td>
</tr>
</tbody>
</table>

Type
None

Discipline-Specific
None

If this is an upgrade or replacement, please briefly describe your existing equipment in terms of age and capability or lack thereof:

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Is this hardware required to meet Title 5 and/or Ed Code? If so, how? (Cite code)
Is this software required to meet any local, state or federal Health and Safety Code? If so, how? (Cite code)
2. How will the quality of instruction be improved for student learning and success? Is it necessary for students to succeed in a series of courses?

3. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

4. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

5. Additional Justification for this item:
Instructional Operating Supplies

CHEM-2011

I. Consumable Instructional Operating Supplies

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, PRAC.  
Note: Please group requests into broad categories of items required to teach a class.  
Make ONE entry for each category.  Please enter only if your costs have gone up or down or you need additional funds for some reason.  Don't fill out if your supply budget has not changed.  
Note: These are generally ongoing costs.  One-time items go under Instructional Equipment.

Importance:
• 'A' means that your discipline cannot teach your course(s) without the requested equipment.  
• 'B' means that your course(s) would be greatly enhanced with the requested equipment.  
• 'C' means that you would like this piece of equipment for your course(s) but can wait for a future academic year.

In addition, how many times have you requested this item, but you have not received it?

<table>
<thead>
<tr>
<th>Importance:</th>
<th>Priority:</th>
<th>To Support Annually:</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>01</td>
<td>650 Students</td>
<td>Chemistry</td>
</tr>
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</table>

Broad Category (for example in Chemistry - "Chemicals")
Chemicals, labware

<table>
<thead>
<tr>
<th>Annual Cost</th>
<th>Previous Cost</th>
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</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>How Long?</th>
</tr>
</thead>
<tbody>
<tr>
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<td>None</td>
</tr>
</tbody>
</table>

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Is it necessary for students to succeed in a series of courses?

(See previous request in the amount of $4500 for justification of all supply needs.)

The chemistry discipline has a number of budget accounts.  Before I go any further, I will say that we believe it would
be easier and make more sense if our accounts were reduced to one or two and that a significant portion of our supply monies came from the general fund as opposed to lottery funds. The fact that more than 2/3rds of our laboratory supply budget comes from lottery money in a state that has a $21 billion (billion with a B) dollar budget deficit last year makes us very nervous. At what point do the powers that be in Sacramento decide all that gambling money would be better spent fixing roads that can more smoothly take the masses to their local 7/11 to spend even more money on gambling than wasting it on young people who might actually take statistics and realize driving down said road, potholed or not, in order to buy a lottery ticket is a pretty stupid way to spend their hard earned dollars. Of course, when it gets over $100 million I drive down my pothole filled lane to the local quickie Snack and Booze for a five buck quick pick. I am pretty good with numbers and statistics, but at some point that -what if- just takes over, grinds me down and calls to me like the last Twix bar in the candy drawer. For the record, if I win, I will probably keep my job, at least part time, but most likely will not be department chair and pretty sure I will not ever write one of these again. But hey, I might donate some money to the science center so we will not have to beg for chemicals. I digress, back to budgets.

Below are a list of our accounts as of academic year 09-10. These we will request as rollover. Rollover accounts were not required information in this mini-review but on more than one occasion our "lottery" account went missing and a certain someone who shall remain nameless decided to put it back in the general fund because, as he said, it was lottery money and not used for ongoing supply costs. The problem with this logic was that the money was not supplemented with general fund money. So until that is official, I will keep reminding anyone reading this that we have a number of accounts, all of which need to be funded in order for us to just barely get by.

1) Inst. Supplies (restricted-Prop.
20 lottery money)

Chemistry Banner Account #
12400-22601-43000-190500. Consumables.

$5280
(rollover)

This is one of two chemical supply accounts and is the bigger by far. This account is funded via Prop 20 ("Lottery") money. Having this money come out of prop 20 is dangerous since we
can not always predict our prop 20 allocation. Since this is not an absolutely reliable funding source we suggest this dollar amount be allocated to our department from the general fund. If this cannot happen this year then we still need the money, from the lottery funds. Without these funds our program can not exist.

This money needs to be in our account July 1 in order to get chemicals for the fall semester at a discounted rate, which we rely on!

2) Contract Services Chemistry Banner Acct. # 11100-22601-56700-190500

$900 (rollover). This is for rental of gas cylinders (nitrogen, argon, acetylene, hydrogen, etc.)

3) Rental Account: Chemistry Banner Acct. # 11100-22601-56600-190500

$350 (rollover). We use this money for supplies and incidentals. We have no idea why it is in a separate account from the others.

The two accounts below have been for years in the physical sciences. If I am not mistaken they are both for the administrative assistant for the Science Center. For this fiscal year these accounts may have been moved to the Dean's account as they should be. I just wanted to make note of this so that the admin. assistant can get the money she needs for toner, chalk, etc.

# 11100-22601-56700-601000 ($200)
# 11100-22601-45000-601000 ($1200)
2. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

3. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?

I. Consumable Instructional Operating Supplies

This section will be filled out by faculty and reviewed by the Department Chair, the Area Dean, the Technology Committee, PRAC. Note: Please group requests into broad categories of items required to teach a class. Make ONE entry for each category. Please enter only if your costs have gone up or down or you need additional funds for some reason. Don't fill out if your supply budget has not changed. Note: These are generally ongoing costs. One-time items go under Instructional Equipment.

Importance:
• ‘A’ means that your discipline cannot teach your course(s) without the requested equipment.
• ‘B’ means that your course(s) would be greatly enhanced with the requested equipment.
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<th>Priority</th>
<th>To Support Annually</th>
<th>Discipline Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>01</td>
<td>650 Students</td>
<td>chemistry</td>
</tr>
</tbody>
</table>

Broad Category (for example in Chemistry - "Chemicals")

Chemicals

<table>
<thead>
<tr>
<th>Annual Cost</th>
<th>Previous Cost</th>
<th>Amount of Increase</th>
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<tbody>
<tr>
<td>4500.0</td>
<td>2250.0</td>
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</tr>
</tbody>
</table>

Type

Increasing Cost

How Long?

Ongoing/Recurring

Item to be shared with the following Department/Program: (Include any shared expenses)

Justification for Item (See Rating Rubric)
1. Is it necessary for students to succeed in a series of courses?

The chemistry headcount has gone from 298 students in the academic year 2000-2001 to 637 students in the academic year 2009-2010, a 114% increase in just over ten years. The number of lab sections we offer has gone from 21 sections in 2002-2003 to 37 sections in 2009-2010. For many years our supply budget was $5280. In 2004-2005 we were given an additional, permanent increase in supply budget in the amount of $2250. Though that helped we are still underfunded and our hands are tied with regard to performing new, cutting edge experiments since we use all our budget just to get by. On top of the dramatic increase in enrollment and lab sections offered, our department has done an analysis of chemical costs. We chose ten common chemicals used throughout the semester in a number of classes and evaluated the cost in 2001-2002 to the current cost. The average increase in chemical costs (not including the dramatic increase in shipping costs) was 95.8%. Yes, you read that right, in ten years our enrollment has increase 114%, the number of sections offered has increase by 16 labs, and chemical costs have gone up more than 95%.

2. How will access for students be improved? How many students (annually) will benefit from this request? Is it required to accommodate existing students? Would it be vital to attracting new students?

They will be able to do labs. All 600 or more students taking chemistry can actually DO some chemistry experiments!

3. What student learning or other outcomes are expected? Is it important to the achievement of student goals? How will these outcomes be measured for future planning? What data or evidence supports your request?
Faculty Members
COMP-2011

I. Program Faculty

Additional Teaching Unit Requests

III. FT Faculty Needs (Please fill this out ONLY if you are stating a need for new full time faculty in your area.)

1. Please indicate if there are NO FT faculty in your discipline. Please provide data regarding the length of time this discipline has been without a full time instructor.

The full time faculty who was teaching in this discipline can not or will not teach in the evenings. We have shown an evening program to be very successful and so the former FT faculty member now teaches in the Math department. Therefore as of now there is no full time faculty member.

When I was hired in 2004 the Computer Science discipline had been in steady decline for many years. By the time I became department chair 4 years later the program was almost non-existent. At that time enrollment for the whole year (fall and spring combined) varied between 35 and 50 with some terms having as little as 15 students for the entire program. There is probably no single factor for the cause of this decline in what should have been a robust program through the 90s and 2000s, but a few issues seem to emerge as most probable.

1) The courses were rarely updated. Some course outlines had not been updated since the early 80s. Of course many of these courses could not be submitted to update articulation agreements and so
began to be seen as worthless to our transfer students.

2) Courses were scheduled M-TH typically between 11AM-2PM. There was no attempt to schedule courses in conjunction with other subjects that students might be taking such as math, physics, engineering etc. Also there was no attempt to see if a night CS sequence would appeal to a broader audience of students.

3) Because the one full time instructor refused to make an honest attempt at updating the courses, the reputation of the program declined, courses often were cancelled for low enrollment and the cycle continued.

The situation got so absurd that I had witnessed, on more than one occasion, the instructor of record walking into an empty classroom at the assigned class time, sitting down for the required 80 minutes, and then leaving.

When elected as Academic Senate VP I help develop a new revitalization policy, not only because as an institution we were required to have one, but also with an eye to saving the computer science discipline. Once in place we carried out the following:

1) Did an analysis of more than 20 UC and CSU computer science programs and decided what were the top 8 to 9 courses we could offer that would allow greatest flexibility to our transfer students while at the
same time attracting potential non-traditional students to the program.

2) Deleted more than 10 courses that were outdated or otherwise specialty courses that did not have a broad appeal to our students.

3) Rewrote all the remaining course outlines and added laboratory components to the core programming courses (yes programming used to be taught at CoM without the students ever sitting in front of a computer!).

4) Scheduled the entire program M-TH evenings. This served a number of purposes: transfer students could take their other science and math during the day, working community members could explore computer programming classes, and we were able to bring new part time instructors with ideas and energy into the department.

5) Rewrote the Computer Science AS degree which was subsequently approved by the Chancellor’s office and is in the new catalog as of this semester.

Since launching the newly revised program our enrollment has steadily increased. We have gone from less than 23 students a year just before revitalization to more than 74 students this term alone and we are on course to serve nearly 120 in the new computer science program.

However, the program needs a full time
instructor. Because of an increase in TU for our core programming courses (upon the addition of a lab section for each) our current part-time instructors can only teach one course at CoM. There is no continuity in the discipline and no one to take the fledgling revitalized program and develop it into the strong and robust program it should be.

It should also be pointed out that during the revitalization process I did, as department chair, request a new full time instructor be brought on board. Unfortunately because we were involved with the revitalization and I had to do program reviews for chemistry and help with physics, I never submitted a detailed program review for CS. When the 22 new positions were announced I asked about the requested CS full time position and was told that since it was not in the program review document we did not get one.

2. Non-availability of part-time instructors in a subject area. Please provide evidence demonstrating the difficulty in finding part-time instructors to teach in the subject area.

We advertised for someone to teach the advanced C++ (COMP 235) for the spring semester for more than two months with only two unqualified applicants showing interest. Luckily the chair of the department at SRJC has decided to help us out by teaching the course. The newly revitalized program will not survive without a full time instructor taking over.

3. New FT Faculty: How many NEW FT faculty have been hired in past 10 years? Please list each faculty name and the year of employment. If this instructor is shared with another department, please list the equivalent FTE% for your department. Please list instructional equivalencies as necessary and if faculty member was the result of retreat rights.

Zero

4. Reduction in department TUs as a result of FT Faculty retirements or other significant causes? Please provide data that illustrates a change in teaching unit allocation as a direct result of FT faculty retirements within your department and how this may change in the coming
year(s).

We almost lost the program or a variety of reasons. Over the past two years we were able to get some of the TU back through the revitalization process.

5. Other reasons: Have there been other causes for a reduction in units in your discipline? If so, please explain and provide evidence.

6. Changes in Student Demand: Recent or forthcoming growth as a result of added sections due to enrollment demands. Provide evidence that illustrates the need for additional faculty due to increased student demand such as numbers of sections added and/or courses with waitlist totals showing a need for additional sections. What is the % of FTEF for this increase in units? If there has been a decline in student growth, please explain why.

See above.

7. Current of forthcoming changes that illustrate the immediate need of additional FT faculty within this department. Please outline all relevant circumstances that justify the priority of a FT hire in addition to those already outlined above. Consider changes in the field, changes in the job market and population shifts.

With a FT instructor we can continue to build the program, add courses as student demand grows and make the discipline robust as it should be.

8. Program Review Findings: Indicate what trends you identified in your last program review that support the need for full time faculty hires. Tie these to the department and college mission.

I can only compare to chemistry, where 3 full time instructors were hired in the past 10 years and the enrollment has gone up 114%. I can't say that that is the only factor, but breathing new life into a discipline from time to time can not hurt!

9. Other considerations: Include such information as matriculation needs, changes in student demand or community and job market needs, response to legislation, or rapid growth of the discipline.

10. Shared Resources: If you have requested FT faculty that will be used by more than one department, please indicate here. Please indicate which disciplines and/or departments and the number of combined students/faculty or classes he/she would serve. Please indicate how it will improve access or outcomes and if it is needed for health and safety concerns or required by law.
Non-Instructional Support Staff

I. Current Support Staff
II. Request for additional support staff

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Type</th>
<th>Approx. hours per week</th>
<th>To support:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerical</td>
<td>Full-Time</td>
<td>40</td>
<td>4000 Students</td>
</tr>
</tbody>
</table>

Justification: Please address the following areas as applicable. How will it be used? How will instruction be improved for student learning and success? How will access be improved? What student learning outcomes are expected? How will the outcomes be measured? What data or evidence is supplied to support your justification?

The Science Center is one of the only divisions on campus with a part time administrative assistant. Serving Math, Life and Earth Science, and Physical Science our administrative assistant has, by far, the greatest workload in terms of number of students served (based on FTES from the Data Dashboard) and one of the highest if the highest in terms of faculty. On top of this the Science Center houses a huge number of community ed classes that also use resources that our administrative assistant must monitor and take care of. And yet she is part time. This situation is truly absurd. And to make matters worse, there is not reason for it. The historical root for the situation has nothing to do with logic and instead personality. The story goes that some battle of wills and personalities took place many years ago and the department chairs all got together to drive a certain person out. In order to do this they made the position part time so she would be forced to leave as she needed/wanted a full time position. Sounds crazy? It is. So we need a full time person back in that seat!

Shared Resources: If you have requested additional staff that will be used by more than one department, please indicate here. Please indicate which disciplines and/or departments and the number of combined students/faculty or classes he/she would serve. Please indicate how it will improve access or outcomes and if it is needed for health and safety concerns or required by law.

Physical, Sciences, Life and Earth, Math, and a vast number of Community Ed classes and instructors rely on this person.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>Type</th>
<th>Approx. hours per week</th>
<th>To support:</th>
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</thead>
<tbody>
<tr>
<td>Lab Tech</td>
<td>Work Study</td>
<td>16</td>
<td>650 Students</td>
</tr>
</tbody>
</table>

Justification: Please address the following areas as applicable. How will it be used? How will instruction be improved for student learning and success? How will access be improved? What student learning outcomes are expected? How will the outcomes be measured? What data or evidence is supplied to support your justification?
The number of students served in the chemistry laboratories has increased significantly in over the past decade. The chemistry discipline served 298 students in the academic year 00-01. In the fall of '09 and spring of '10 there were 637 students taking chemistry. That is a 114% INCREASE in current enrollment when compared to ten years ago.

The number of sections we offer as a discipline has gone from 21 in the academic year 2002-2003 to 37 in 2009-2010. In that time no new lab personnel were hired. The extra load was taken on by the lab tech, Mike Stinson, without compensation! Our new lab Tech, Laura Cooper, has now taken over this massive work load.

Finally, next year we will be moving to a new building with only two (instead of our current three labs...which is one of the dumbest decisions ever as we grew out of the planned building before they took the first shovel full of dirt....but I digress). We will now be forced to offer lab sections in the morning (which will conflict with most other general ed offerings in the school....but we can blame that on a bunch of administrators and "planners" who no longer work here...again, digress). And/or we will be offering labs in the old science center. We recently hired a new lab tech, Laura Cooper, who works overtime (unpaid) ever week. She will not be able to serve all the labs we offer once the new building is online. We request either a 0.5 part time lab tech or at least a guaranteed 15-20 hour work study allocation. Each year we have qualified students but getting work study monies and filling the spot on a consistent basis is challenging. In the past there were work study students performing these tasks, but over the years we lost that allocation. We would like it back.

**Shared Resources:** If you have requested additional staff that will be used by more than one department, please indicate here. Please indicate which disciplines and/or departments and the number of combined students/faculty or classes he/she would serve. Please indicate how it will improve access or outcomes and if it is needed for health and safety concerns or required by law.

If we can not get a dedicated work study allocation then we would request a 25% lab tech to be shared with Life and Earth Science as they could possible use a 50-75% lab tech. We would be happy to share them if person was qualified to do both. If biology has a part time person or needs one, that might be a great partnership.
Department Chair Comments

CHEM-2011

1. Please rank the instructional equipment requests, technology requests and other instructional materials requests sections. Please comment especially on any specific priorities without which this program cannot function.

Our supply budget(s) are essential to the program. Without them we cannot offer the lab courses. One major concern is the increased chemical costs and enrollment over the years. We requested a moderate increase in supply budget. If necessary this increase can be allocated in increments over two to three years. The second major concern is that a major portion of our supply budget comes from lottery money. In the past this money has been withheld by a certain CoM administrator for reasons unknown. We do not really care where the money for supplies comes from, but the fact that the initial intent of lottery funds were to enhance programs, as opposed to fund them in lieu general fund money, and the fact that lottery money is not guaranteed makes us wonder if in fact department budgets, for all departments, should come out of general funds, and lottery money should be used as it was initially proposed, for one time enhancements, special equipment etc. that could not otherwise be purchased from general funds. (Just a thought.)

Also, we have a number of very expensive items requested in our equipment list. The main reason we are doing this is because no one ever informed us when it was time to use some of the FF&E money to put new, updated equipment into the new building. Since this is the last time we will do PR before moving, we thought it would be a good idea to add these items. We also think it a good idea for someone, anyone, to have thought of this before us, and told us whether this is the correct venue for these requests. The fact that we are to move in less than a year, the budget for next year is going to be approved soon, and there has been no mention of how or when to spend our allotment of equipment money (or even what that allotment is) is just plain irresponsible! So, in order to not miss out as we did last year, we have requested a number of expensive and yet necessary items in both chemistry and physics.

2. Please comment if additional units, faculty, or staff have been requested.

We would like a 0.4 part time lab tech, or a permanent allocation for work study to hire a student lab assistant(s). (The latter being the desirable.) With the move to the new building and the fact that we are, absurdly, going from three labs to two (even though our growth has been nearly 140% over the past 10 years) we will have to schedule classes in a way that would cause our current, and only, lab tech to work about 60 hours a week.

3. Other comments

Have a nice day!