

INSTRUCTIONAL EQUIPMENT REQUEST
2017-2018

RECEIVED

NOV 8 2017

Internal Use
IE #: FALL-27
Total \$: 459.68

Requester Name: Richard Grow

STEMS Division
Las Positas College

Division Name: MSEPS

SECTION 1: SUMMARY INFORMATION

Brief Title of the Request:

We need 20 new molecular model kits (Moly Mod MMS-008).

Equipment Location Building: 1800

Room: 1804

Location Comments:

11/16/17

SECTION 2: EQUIPMENT DESCRIPTION

The equipment is: A Replacement An Upgrade New Equipment/Technology

Describe the specific equipment requested and how it will be used to replace, upgrade or provide new technology to LPC from what is currently in place:

When we had 2 sections of organic chemistry, with a cap of 24 students we purchased 50 model kits for the students to use during the course. We now have 3 sections, with a cap of 22 students. We would like to purchase 20 more model kit (the same set) so that all of the students in organic chemistry have access to a model kit.

SECTION 2: EQUIPMENT DESCRIPTION (contd)

If applicable, describe the legal requirement, mandate, or safety concern for purchase of this equipment, making specific reference to the legal requirement or regulation:

There are no safety or legal concerns for this request.

SECTION 3: LPC MISSION STATEMENT AND LPC PLANNING PRIORITIES

LPC MISSION STATEMENT:

LPC is an inclusive learning-centered institution providing educational opportunities and support for completion of students' transfer, degree, basic skills, career-technical, and retraining goals.

LPC PLANNING PRIORITIES:

- ❖ **Accreditation:** Establish regular and ongoing processes to implement best practices to meet ACCJC standards.
- ❖ **Curriculum:** Provide necessary institutional support for curriculum development and maintenance.
- ❖ **Tutoring Services:** Expand tutoring services to meet demand and support student success in Basic Skills, CTE, and Transfer courses.
- ❖ **Professional Development:** Coordinate available resources to address current and future professional development needs of faculty, classified professionals, and administrators in support of educational master plan goals.

Specify how the equipment supports *LPC's Mission Statement and Planning Priorities:*

We want to give our students the kind of education in the science they will need to get a job working in a science lab or to transfer to a 4-year college or university. The ability to visualize the molecules and predict the stereochemistry of organic reactions requires the student to use model kits. They use them to study the material and to analyze the products formed on their exams. The model kits being requested supports both the mission of the College and the Program to provide educational opportunities and academically prepare students for transfer, degree completion, or a technical career. Many students taking Organic Chemistry are transfer students majoring in Biology, Chemistry, some Engineering fields, or pre-med/dental. This chemistry course series also fulfills degree requirements for both the AS-Chemistry and the AA-Chemistry Education degrees at LPC.

SECTION 4: EDUCATIONAL ITEMS – PROGRAM REVIEW

Specify the educational programs this equipment supports:

The equipment will have substantial impact on the Chemistry program curriculum for students because:

- 1) Many students taking Organic Chemistry are transfer students majoring in Biology, Chemistry, some Engineering fields, or pre-med/dental. The Organic Chemistry series (12A/12B) is required for all biology and chemistry majors and some engineering majors. This chemistry course series also fulfills degree requirements for both the AS-Chemistry and the AA-Chemistry Education degrees at LPC. The course outlines for 12A/12B which are used for course articulation and C-ID approval list stereochemistry as part of the course material. The model kits are an important part to understand stereochemistry.
- 2) Completing the third set for the new section will ensure that students receive a better understanding of the concepts of stereochemistry.
- 3) The additional model kits will allow us to sustain three sections of Organic Chemistry. This has always been a high-demand course, especially now that more universities are accepting them for transfer. The demand for these courses will only increase when the TMC for chemistry is finally approved.

If this equipment is included in your Program Review, please include the exact wording. If equipment is not included, explain why:

Section One, Part B:

Supplies and equipment: More students in the program means more chemicals used, more glassware and other equipment needed, and higher frequency of use of instruments. With the 10% increase from last year in the number of sections offered and the addition of third sections of 12A and 12B, the Program has increased need for:

The model kits are part of the other equipment.

- Supplies budget to cover increase use of chemicals and glassware. In particular, the third section of the 12AB series requires special chemicals, locker equipment, and increased equipment maintenance and repair funding for instrumentation.

The model kits are stored and checked out in the lab class.

Section One, Part E:

Lack of funding for supplies and equipment

- We still lack funding to fully equip the third section of the Organic Chemistry.

This is part of what is needed for the third section that we added.

Section One, Part F:

In 2017 – 2018, we plan to:...

- Request funding for Organic Chemistry additional locker equipment, kits, and glassware for the third section.

The model kits are one of the kits used in the lab class.

SECTION 5: TEACHING AND LEARNING

Describe in detail the impact this equipment will have on teaching:

It is hard for the students to picture what is meant by back-side attack and what the product will look like if they do not have access to a model kit. In addition we talk a great deal about the different conformations a compound can be in and the model kits are the best way for the students to understand a great deal of the material in the first semester of organic chemistry.

Describe in detail the impact this equipment will have on learning:

If we do not have these kits, we will have to ask 20% of the students to buy their own kit so they can visualize what the other students see with the model kits. The other way would be not to utilize the 50 model kits we do have and just ask all of the students to buy their own kit.

Each academic year, this equipment will impact: ⁶ _____ # of classes/sections ¹³² _____ # of students

SECTION 6: OUTCOMES (SLOs)

Using your documented SLOs, specify how the equipment will enable student learning outcomes to be achieved.

Most of our SLOs are based on the standardized American Chemical Society exams. These compare our student's knowledge to that of students from other institutions in the nation. Without a good understanding of the 3-dimensional aspect of the organic molecules the students do not have a good understanding of what really occurs in an organic chemical reaction. They also do not understand the basis for our understanding of the mechanisms that are used in Organic chemistry.

What are the consequences related to learning outcomes if request is not funded?

The students understanding of stereochemistry and mechanisms will be reduced.

SECTION 7: TOTAL COST OF OWNERSHIP (FINANCIAL & SUSTAINABILITY)

What is the potential life span of the requested equipment?

The life span of these posters and tables would be about 5 - 10 years or more if the pieces are not lost..

If new storage is needed what are the storage requirements, location requirements, and costs associated with the new equipment: (NOTE: Specific storage costs should be detailed in the “Part A: Initial Start-up Costs” section below.)

There is no new storage requirements.

If this equipment replaces old equipment but the old equipment will not be retired, are there on-going storage requirements, location requirements, and costs associated with the old equipment? If so, provide details.

No.

What will be required to maintain the equipment, such as regular servicing or upkeep? (Specific on-going costs should be detailed in the "Part B: On-Going Annual Operating Costs" sections below as applicable.)

There will be no on-going costs.

Explain how this equipment meets or exceeds basic sustainability efforts and/or provides renewable resources to the college:

These kits allow our organic students now and in the future to gain a better understanding of inorganic molecules and organic reaction mechanisms.

Part A: Initial Start-up Costs

<u>Item</u>	<u>Cost</u>	<u>Comments</u>
Equipment or Materials	\$419.80	20 - MMS -008 model kits
Taxes (9.5%)	-\$0	39,88
Shipping or Delivery Charge	0	
Installation Costs *		
Miscellaneous Costs:	0	
Facilities Modifications		
Operator Training		
Maintenance & Repair Training		
Storage		
Other:		
Vendor Discount		
Grand Total:	\$419.80	\$459.68

*For items requiring installation, requesters are required to check with District Purchasing (Victoria Lamica) regarding District policies.

Part B: On-Going Annual Operating Costs

<u>Item</u>	<u>Cost</u>	<u>Comments</u>
Annual Service or Maintenance		
Estimated Parts Replacement Per Year		
Outside Standardization or Calibration Costs		
Storage Costs		
New Supply Costs		
Miscellaneous Costs:		
Maintenance & Repair Labor		
Other:		
Annual Operating Costs:	\$0	

Indicate the source of funding for on-going annual operating costs:

Part C: Incremental Labor Costs

OPERATOR:

Indicate the key operator: the organic chemistry students

Is this in their current scope of duties? yes

Indicate cost to train key operator (include in Initial Start-up Costs above): N/A

Indicate amount of time per month key operator will use equipment: on average probably 5 - 10 hours.

MAINTENANCE & REPAIRS:

Indicate the person performing maintenance and repairs: _____

Is this in their current scope of duties? _____

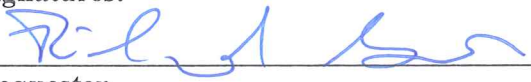
Indicate cost to train for maintenance and repairs: _____

Indicate amount of time per month maintenance will be required: 0

APPROVALS

Funded requesters will be expected to respond to a brief RAC feedback survey by a requested deadline. Requests for computer-related equipment and printers must be reviewed by the LPC IT Department.

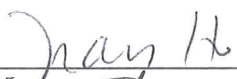
Signatures:


Requester

11/8/17
Date

IT Department (if required)

Date


Dean/Manager

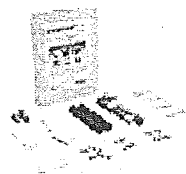
11/9/12
Date


Vice President

Date

Choose FREE No-Rush shipping and receive a \$5 reward towards your next purchase on www.primenow.com or the Prime Now app. Ultra-fast delivery, from morning to night. Guaranteed delivery date: Nov. 10, 2017 If you order in the next 4 hours and 54 minutes ([Details](#))

Items shipped from Amazon.com



Molymod MMS-008 Organic Chemistry Molecular Model, Student Set (50 atom parts)
by England Spiring Enterprises Limited
\$20.99

Qty:

Sold by: Molymod Molecular Models

[Add a gift receipt](#)

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Choose your Prime delivery option:

Friday, Nov. 10

FREE Two-Day Shipping

Thursday, Nov. 16

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Order total: \$419.80

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Order Summary

Items (20): \$419.80

Shipping & handling: \$0.00

Total before tax: \$419.80

Estimated tax to be collected: \$0.00

Order total: \$419.80

Request for 20 new molecular model kits

Last year we purchased 50 model kits (MolyMod) to allow all of our organic students to check out a model kit. The students study the structures, chirality and mechanism used in organic chemistry with these kits. The students use these kits at home to study and during the tests. We have been using these kits for 2 years now. We used to average about 45 organic students a semester. We have added a third section of 12A in the fall and 12B in the spring. We are filling all three sections, (this fall) which means 66 students. We purchased these kits from England. They took 2 months to arrive and cost about \$50 each. We would like to purchase 20 more to allow us to accommodate all of the organic students we have. We can purchase these same kits from Amazon for \$20.99 each or \$420 for 20. The only other source I found was Scientrific (Science Educators Resource) for \$36 each or \$720.

LAS POSITAS COLLEGE Equipment, Apparatus and Service Requisition #R

FOR REIMBURSEMENT: List payee name & ssn. TAX ID# NOV 8 2017

SUGGESTED VENDOR **Amazon.com**

NAME OF STAFF MEMBER **Richard Grow** DATE WRITTEN **8-Nov-17** DATE REQUIRED **10-Jul-05** DIVISION/ DEPARTMENT **MSEPS** 1804 **1804** For inventory purposes include requisition # where Las Positas College

FOR OFFICE USE ONLY

RETURN COPY OF REQUISITION TO:

DESCRIPTION (PRODUCT, TYPE, SIZE, COLOR, STOCK NUMBER)	UNIT	QTY	UNIT PRICE	UNIT PRICE	Air
<u>Moly Mod kits</u> <u>MMS-008</u>	1	20	\$ 20.99	\$	419.80
				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
Vendor Information/ Remit To: Deliver To, include room # (optional):				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
				\$	-
Comments:	Subtotal			\$	419.80
BT#	Tax		\$ -	\$	-
	Shipping (if available):				
	TOTAL COST			\$	419.80

Original invoices and receipts must be attached for payment. Include current taxes unless incorporated in price.

ACCOUNT # _____ FUND _____ ORG _____ ACCT _____ PROGRAM _____

Business Office

APPROVALS Dean 10/11/17 Supervisor/ Coordinator/ Director

[Signature] Dean/VP/President