

**PORTERVILLE COLLEGE**  
**PROGRAM REVIEW REPORT: INSTRUCTIONAL DIVISIONS**

Division: Natural Science  
Contact Person: Joel Wiens

Submission Date: 01/10/2019

**Porterville College Mission Statement:**

With students as our focus, Porterville College provides our local and diverse communities quality education that promotes intellectual curiosity, personal growth, and lifelong learning, while preparing students for career and academic success.

In support of our values and philosophy, Porterville College will:

1. Provide quality academic programs to all students who are capable of benefiting from community college instruction.
2. Provide comprehensive support services to help students achieve their personal, career and academic potential.
3. Prepare students for transfer and success at four-year institutions.
4. Provide courses and training to prepare students for employment or to enhance skills within their current careers.
5. Provide developmental education to students who need to enhance their knowledge and understanding of basic skills.
6. Recognize student achievement through awarding degrees, certificates, grants, and scholarships.

**Program Mission Statement:**

The division supports the mission of Porterville College and is committed to making the learning of science interesting, meaningful and enjoyable to our students, while providing full coverage of course topics to meet the expectations of the Student Learning Outcomes in each course and program. The division does so by providing a vocational program prerequisite and transfer-level instruction in biological and physical sciences.

**Student Learning Outcomes:**

*Assessment time frame*

The division completed assessment of all SLOs for all science classes in the spring of 2012. SLOs for individual courses are on independent completion schedules depending on the faculty member, but all SLOs in all classes are completed during a 4-year assessment cycle. The second assessment cycle of course SLOs was completed in the spring of 2017. Course SLOs are discussed among faculty when they are assessed at their scheduled semester.

*Tools*

Course SLOs are assessed by faculty using correct answers from lab activities, lab quizzes or tests, lecture quizzes or tests, and other assignments.

*Results and Analysis/Action Plans*

Individual course SLOs results and analysis/action plans can be retrieved from ...

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**Program Learning Outcomes:**

There are two programs provided by the division.

1. Associate of Science degree in Biological and Physical Sciences  
 (To serve students that are interested in careers in the biological and physical sciences - such as biology, chemistry, physics, and geology.)
2. Associate of Arts degree in Biological and Physical Sciences  
 (To serve students who are interested in allied health careers.)

An Associate of Science for Transfer in Biology has been approved by our curriculum committee and is pending C-ID approval.

**History**

The division completed one full cycle of assessment of PLOs in the spring of 2012 for both the AA and AS Biological and Physical Science degrees. The 2012-13 year was spent evaluating and changing the PLOs for the AA and AS degrees in biological and physical science. The second assessment cycle of PLOs were completed in the spring of 2017. It was agreed that the PLOs were appropriate and the third assessment cycle began fall of 2017.

**PLOs for AA in Biological and Physical Sciences**

Students graduating with an AA in Biological and Physical Science will be able to:

1. Apply the scientific method to analyze physical and biological processes.
2. Use scientific terminology appropriately.
3. Draw appropriate conclusions from laboratory activities.
4. Identify the relationships between natural science, human activities and society.
5. Identify levels of organization within natural systems and relate to biological and/or physical processes.
6. Describe the structure and properties of matter, transfer of energy, and the relationships between matter and energy within biological and/or physical systems.
7. Explain basic physical, chemical and/or biological processes.
8. Select the appropriate qualitative and quantitative methods to analyze physical systems

**Curriculum Map for the AA Degree in Biological and Physical Sciences**

<b>PLO</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>
ANAT P110	X	X	X	X	X	X	X	
BIOL P105	X	X	X	X	X	X	X	
BIOL P106	X	X	X	X	X	X	X	
BIOL P110	X	X	X	X	X	X	X	
MICR P106	X	X	X	X	X	X	X	
PHYL P101	X	X	X	X	X	X	X	
BIOL P118	X	X	X	X	X	X	X	
ASTR P101	X	X	X	X	X	X	X	

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CHEM P101A	X	X	X	X	X	X	X	X
CHEM P101B	X	X	X	X	X	X	X	X
CHEM P106	X	X	X	X	X	X	X	X
ESCI P110	X	X	X	X	X	X	X	
GEOL P110	X	X	X	X	X	X	X	
PHSC P112	X	X	X	X	X	X	X	X
PHYS P102A	X	X	X	X	X	X	X	X
PHYS P102B	X	X	X	X	X	X	X	X
PHYS P104A	X	X	X	X	X	X	X	X
PHYS P104B	X	X	X	X	X	X	X	X

X Course assesses this SLO.

**PLOs for AS in Biological and Physical Sciences**

Students graduating with an AS in Biological and Physical Science will be able to:

1. Apply the scientific method to analyze physical and biological processes.
2. Use scientific terminology appropriately.
3. Evaluate results from laboratory activities.
4. Assess the relationships between natural science, human activities and society.
5. Identify levels of organization within natural systems, and relate to biological and/or physical processes.
6. Describe the structure and properties of matter, transfer of energy, and the relationships between matter and energy within biological and/or physical systems.
7. Explain and apply knowledge of basic physical, chemical and/or biological processes.
8. Apply the appropriate qualitative and quantitative methods to analyze and solve problems in physical systems.

**Curriculum Map** for the AS Degree in Biological and Physical Sciences

PLO	1	2	3	4	5	6	7	8
BIOL P105	X	X	X	X	X	X	X	
BIOL P106	X	X	X	X	X	X	X	
MICR P106	X	X	X	X	X	X	X	
PHYL P101	X	X	X	X	X	X	X	
CHEM P101A	X	X	X	X	X	X	X	X
CHEM P101B	X	X	X	X	X	X	X	X
CHEM P106	X	X	X	X	X	X	X	X
PHYS P102A	X	X	X	X	X	X	X	X
PHYS P102B	X	X	X	X	X	X	X	X
PHYS P104A	X	X	X	X	X	X	X	X
PHYS P104B	X	X	X	X	X	X	X	X

X Course assesses this SLO.

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*Tools*

1. PLOs are assessed by faculty using correct answers from lab activities, lab quizzes or tests, lecture quizzes or tests, and other assignments. Each Instructor will determine assessment tools in each of their courses that will directly assess the PLOs for that cycle.

Assessment Timeline

for the PLOs of the AA and the AS Degrees in the Biological and Physical Sciences.

1. Two PLOs are assessed each year in a 4 year cycle.

2016-2017	2017-2018	2018-2019	2019-2020
PLOs Assessed 7, 8	PLOs Assessed 1, 2	PLOs Assessed 3, 4	PLOs Assessed 5, 6

2. At the last department meeting in spring or the first August meeting, the previous year's assessments are discussed and recorded. Evaluation of the assessment questions addressed at this time.
3. PLOs will be revised, if necessary, during the fourth year of each 4-year cycle.

Results and Analysis/Action Plans

Program Learning Outcome results and analysis/action plans can be retrieved from ...

**Program Analysis and Trends:**

(Please review current performance based on the data provided by the Office of Institutional Research (or other relevant data) for your department(s) and summarize trends for the past three years. These data cover enrollment, faculty load, productivity, and course retention and success rates.)

**Background Information**

During the last three years, the division has taught 7 courses in the biological sciences and 11 courses in physical sciences. Courses that are currently taught include high unit courses required for science majors and lower unit general science courses that serve a wide variety of majors. The division presently has nine science full-time tenure track faculty, two regular teaching adjuncts, and three dual enrollment instructors.

All the courses offered in the division tie directly to the Community College Core Mission of Basic Skills, Core Transfer, and Career and Technical Education. The division offers courses to complete the Porterville College graduation and transfer requirements in biological sciences and physical sciences, as well as courses required to complete Area 5 of the Inter-segmental General Education Transfer Curriculum (IGETC) and courses to complete Area B-1, B-2, and B-3 of the CSU General

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**Education Breadth Requirements.**

The division offers the courses necessary to fulfill the degree requirements for the Associate of Art Degree in Biological and Physical Science, the Associate of Science Degree in Biological and Physical Science, and Associate Degree of Transfer in Biology (pending C-ID approval).

The division offers the necessary required prerequisites for students to transfer and major in any biological science, chemistry, or physics emphasis. Healthcare careers are commonly mentioned - (Pre-Medical, Pre-Dental, Pharmacy, Veterinary Medicine, Physical Therapy, Occupational Therapy, Respiratory Therapy, 2 or 4-year RN programs, Radiology Technician, Dental Hygiene, Psychiatric Technician).

***Changes in Program Over Last Three Years***

1. The science technician position was changed from a 1733 flexible hour position to an 11-month position.
2. The division hired one more FT biological science faculty to bring the total to 9 FT faculty.
3. Due to the increased number of lecture/lab classes due to additional FT and PT faculty, Some Anatomy P110 and Biology P110 lectures have moved out of lab classrooms, combined two class sections, and moved to the Forum SM-102.
4. Because additional labs are scheduled as FT and PT faculty have become available, the budget allocation per lab has not been allocated. Special one-time funding has been asked for and provided by the budget committee.
5. Informational papers have been developed and given to students and counselors to increase awareness that students need to take classes in the right order for their best chance of success.

***Data Review***

Year	13-14	14-15	15-16	16-17	17-18
Division FTES	257.6	265.1	285.1	304.9	309.3
Division FTEF	15.9	17	17.2	17.8	18.2
Division Productivity (FTES/FTEF)	16.2	15.6	16.6	17.2	17.0
College Productivity	15.7	14.9	15.1	14.4	14.1
Division # of Sections					
Life Science	18	17	20	23	24
Physical Science	17	21	21	22	22
College Retention	87%	88%	88.6%	89.6%	90%
Division Retention	88.8%	90.5%	91.5%	89.3%	88.3%
College Success	70%	70%	71.0%	72.6%	74.8%

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Division Success	75.5%	73.2%	78.1%	79.2%	76.5%
Subject Majors:					
Biological & Physical Science	268	270	296	381	407
Liberal Arts/Math & Science	72	63	76	84	85
Awards by Type & Program:					
AA Biological & Physical Science	37	41	54	41	64
AA Liberal Arts/Math & Science	5	9	13	13	23
AS Biological & Physical Science	13	19	18	16	16

***Program Strengths***

During the last three years, productivity/year has varied between 16.6 and 17.2, while number of sections/year have varied between 41 and 46. The division continues to enroll more students per class than our sister colleges in the district and more than is pedagogically recommended. The division's productivity is consistently above the campus average, even with the offering of low enrolled classes in the upper physics sequence, which are required for completion of degrees and transfer.

The division's FTES has increased over the past three years. During this time, the division taught chemistry classes during the summer and was fortunate to find and hire adjunct faculty for biological science classes (semester and summer).

The science class retention rates are consistent with the campus as a whole. The success rates show a few percentage points higher than the college average every year.

The last three years have shown an increase in Biological & Physical Science majors from 296 to 407. As discussions about the importance of graduation have increased and additional adjunct teachers have been found, the number of Associate of Arts (AA) degrees granted in both Biological & Physical Science and Liberal Arts/Math & Science were the highest on record. Associate of Science (AS) degrees granted in Bio & Phys Science have remained stable. As the division is able to hire additional FT and adjunct faculty, the number of degrees and FTES can continue to increase.

The division is committed to providing classes at varied times, including evening classes, thereby allowing students to schedule their classes around other activities. FT tenure track professors regularly teach classes that begin after 5:00 PM, and science labs frequently last until 9:10 PM. Within a two-year period a student should be able to schedule most of the classes in the division necessary for transfer or to complete a degree.

Currently division faculty sit on the PUSD pathways of Environmental Science Academy, Academy of Health Sciences, and Academy of Engineering. Faculty also participate in special teaching/expertise sessions and competition judging.

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***Areas for Improvement***

The gateway classes for pre-med, pre-dentistry, physical therapy, all biology majors, and all chemistry majors are Biology P105/106 and Chemistry P101A. These classes fill up quickly (within the first three days of priority enrollment) and some students must wait an entire year in order to enroll. These classes could support an additional class each semester they are taught.

The gateway classes for RN, physical therapy assistant, radiology tech, dental hygiene, and occupational therapy are usually some combination of Anatomy P110, Physiology P101, Chemistry P016, and Microbiology P106. These classes fill up quickly (between one and three days) and students can wait between 1 and up to 4 semesters to enroll. These classes (including Chemistry P106) could support 1-2 additional classes/semester.

**Waitlist First Day/Census Enrollment – for 2017-2018**

Biological Sciences – First day enrollment shows 335 students on the WL for classes and 738 students enrolled at census. Thus 335/1073 or 31% student need in biological sciences was not met.

Physical Sciences – First day enrollment shows 143 students on the WL for classes and 624 students enrolled at census. Thus 143/767 or 19% student need in physical sciences was not met.

Finding adjuncts in Science is challenging. Porterville and the surrounding area have very few people with a master's degree. Effort is being made each semester to look for qualified adjuncts. Student wait lists show that Science could add numerous classes each semester, however lecture and lab room usage is tight during the day between 8:00 AM - 4:10 PM when pedagogically “puzzle-piecing” 6 hr/wk and 9 hr/wk classes in the needs for lecture and labs (especially due to live lab materials not being able to be delivered Monday or Tuesday morning). Adjuncts who can come in for late afternoon and evening classes would benefit the many students that are on waitlists.

The science lab classes are dependent on a knowledgeable and efficient Laboratory Technician. In Fall of 2017, the Laboratory Technician position was changed from a 1733 hour flexible position to an 11 month position. This was direly needed. Among the lab technician's responsibilities is the preparing of exacting chemical solutions, aseptic bacterial cultures and media, and a wide range of biological specimens, equipment, and supplies every day. The Laboratory Technician is also responsible for ordering all supplies needed for each semester, safe storage of hazardous materials and pathogens, and the disposal of hazardous waste. Most labs begin at 8:00 and the afternoon labs last until 4:10. Labs are also scheduled at night.

During these last three years we have been able to add more labs/year in anatomy, physiology, microbiology, and biology because of our hiring of one additional FT and PT faculty. Spring 2016 had 19 sections at 24 labs/week, however Spring 2019 has 25 sections at 31 labs/week. However, as more labs are added, the preparation expectations exceeds the hours available to our one Laboratory Technician. Presently many professors set up and clean their own labs, as the Laboratory Technician does not have time to help on all labs.

One student worker is provided to the science preparation area to the tune of around 10 hours/week.

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This student, under the supervision of the lab tech, does a lot of dishwashing of beakers, test tubes, and microscope slides, as well as well as lab “scrub down”. This student position is very necessary for the “catch up”, cleanliness, and hygiene of labs, but can be hard to fill and maintain because students find out about other easier jobs on campus and want to switch. When the student worker is absent or behind the Laboratory Technician also takes care of microscope slide and chemical glassware washing.

**GOALS – PREVIOUSLY ESTABLISHED**

<b>1. Previously Established Goal</b>	<b>Completion Date</b>	<b>Needed resources</b>	<b>Person(s) Responsible</b>	<b>Obstacles to completion</b>
Evaluate the need and cost of the Biology AS-T degree.	Spring 2017	Data: (1) where science transfer students attend, (2) estimate of how many biology majors (3) cost of lab apparatus	Division Chair	None

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1 X    Item 2 \_\_\_    Item 3 X    Item 4 X    Item 5 \_\_\_    Item 6 X

Progress on Goal:

X Completed (Date: Fall 2018)

Comments:

Although we have many students with our Biological & Physical Science AS degree transferring to both CSU and UC schools, the division has decided to establish the AS-T in Biology for reasons such as priority enrollment. It requires students to take a full year of physics (CSU) or a full year of organic chemistry (UC). It is more practical (student enrollment and funding for equipment) that our division offer the year in physics, rather than the year required in organic chemistry.

Presently many students share that they do transfer but do not complete local requirements for a degree. We believe we can increase biology majors from the present number of 19 to 25-30.

Discussions are also ensuing about increasing the number of sections of gateway class for the AS (Biology 105, Biology 106, Chemistry 101A).



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<b>2. Previously Established Goal</b>	Completion Date	Needed resources	Person(s) Responsible	Obstacles to completion
Evaluate the feasibility of developing an engineering program to bridge between local high schools (Harmony Magnet Academy) and 4-yr institutions.	Fall 2016	Data: (1) estimation of number of students who would enroll (2) estimation of cost of lab apparatus (3) analysis of room availability	Division Chair	None

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1 X    Item 2 \_\_\_    Item 3 X    Item 4 X    Item 5 \_\_\_    Item 6 X

Progress on Goal:

X Completed by Math/Science (Date: Spring 2018)

Comments:

PUSD's Harmony Magnet Academy of Engineering prepares students for college level engineering courses. It would benefit the community and may benefit our college to continue the pathway for students to advance their engineering studies.

Update: The Office of Instruction approved to offering an additional class of Calculus 1. The class population has doubled in the last three years. The number of students we believe may start taking our engineering classes are twenty. Room availability in the SM building for new engineering classes is low between 8:00-4:10; however, courses may find variable times to "puzzle-piece" in. Some room is available after 4:10.

<b>3. Previously Established Goal</b>	Completion Date	Needed resources	Person(s) Responsible	Obstacles to completion
Develop and implement an engineering program to bridge between local high schools (Harmony Magnet Academy) and 4-yr institutions.	Fall 2017	Laboratory equipment Additional faculty Classroom space	Division Chair	Lack of lab/classroom space, lack of funds

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1 X    Item 2 \_\_\_    Item 3 X    Item 4 X    Item 5 \_\_\_    Item 6 X

Progress on Goal:

\_\_\_ Completed (Date:) GOAL MOVED TO MATHEMATICS DIVISION

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**Comments:**

PUSD's Harmony Magnet Academy of Engineering prepares students for college level engineering courses. If our feasibility study warrants it, it would benefit the community and our college to continue the pathway for students to advance their engineering studies. Additional Calculus I and Trigonometry courses have been added to the schedule since 2016. Many meetings between Science and Mathematics have occurred. The Mathematics division has offered to take charge of the Engineering Program.

<b>4. Previously Established Goal</b>	Completion Date	Needed resources	Person(s) Responsible	Obstacles to completion
Media/Pamphlets for science transfer pathways	Fall 2016	Money for printing, access to putting on PC webpage	Division Chair	Lack of funds

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1\_\_\_ Item 2\_ X Item 3\_\_\_ Item 4\_\_\_ Item 5\_\_\_ Item 6\_\_\_

**Progress on Goal:**

X  Completed (Date: Fall 2017)

**Comments:**

Delineating transfer pathways for professions that need a science degree or allied health coursework are helpful for students who are interested in such careers. Informational hand-outs were updated and a professional Science & Mathematics brochure was produced.

<b>5. Previously Established Goal</b>	Completion Date	Needed resources	Person(s) Responsible	Obstacles to completion
Class set of laptops	Spring 2017	Funding	Division Chair	Lack of funds

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1\_ X Item 2\_\_\_ Item 3\_ X Item 4\_ X Item 5\_\_\_ Item 6\_\_\_

**Progress on Goal:**

X  Completed (Date: 2017)

**Comments:**

Computer laptops were purchased and are being used for computer simulations in biology, physiology,

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and physics.

**GOALS - NEW**

1. New Goal	Completion Date	Needed resources	Person Responsible	Obstacles to completion
1. Articulate C-ID approved Physical Science P112 with Fresno State's NSCI 1A/with lab	Fall 2019	Discussion with curriculum leaders in the Liberal Studies Major.	Division Chair	Fresno State not articulating with C-ID approved courses

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1\_\_\_ Item 2\_\_\_ Item 3\_\_\_ Item 4\_\_\_ Item 5\_\_\_ Item 6\_ X\_\_

Progress on Goal:

\_\_\_Completed (Date )  
 \_\_\_Revised (Date )

Comments:

Porterville College now will have an AA-T in Elementary Education. Fresno State is an important transfer institution. Teachers need their Physical Science requirement (NSCI 1A/with lab) which is presently not articulated with our C-ID approved Physical Science P112.

2. New Goal	Timeline for Completion	Needed resources	Person(s) Responsible	Obstacles to completion
2. Develop a Certificate of Completion for Allied Health	Spring 2020		Division Chair and Curriculum Representative	None

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1\_\_\_ Item 2\_\_\_ Item 3\_\_\_ Item 4\_\_\_ Item 5\_\_\_ Item 6\_ X\_\_

Progress on Goal:

\_\_\_Completed (Date )  
 \_\_\_Revised (Date )

Comments:

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Natural Science allied health classes of Chemistry (4 units), Anatomy (4 units), Physiology (5 units), and Microbiology (5 units) could be used to develop a Certificate of Achievement of 18 units, which will be helpful in the new funding formula. Many students take these four classes, but when many students don't get into nursing school only some will go on to earn an AA in Biological & Physical Science.

<b>3. New Goal</b>	Timeline for Completion	Needed resources	Person(s) Responsible	Obstacles to completion
3. Develop a Certificate of Completion for Science Career	Spring 2020		Division Chair and Curriculum Representative	None

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1 \_\_\_ Item 2 \_\_\_ Item 3 \_\_\_ Item 4 \_\_\_ Item 5 \_\_\_ Item 6 X

Progress on Goal:

\_\_\_ Completed (Date )

\_\_\_ Revised (Date )

Comments:

Natural Science classes of Biology, Chemistry, Physics, Physiology, and Microbiology could be used to develop a Certificate of Achievement for Science Careers of 18 units, which will be helpful in the new funding formula. A number of students transfer as science majors at the UC or CSU system without earning an AS in Biological & Physical Science.

<b>4. New Goal</b>	Timeline for Completion	Needed resources	Persons Responsible	Obstacles to completion
4. Enable tech lab instructional resources to keep pace with additional labs offered.	Spring 2020	Class set of 32 laptop computers	Division Chair and Curriculum Representative	Funding \$

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1 X Item 2 \_\_\_ Item 3 X Item 4 X Item 5 \_\_\_ Item 6 \_\_\_

Progress on Goal:

\_\_\_ Completed (Date )

\_\_\_ Revised (Date )

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**Comments:**

With increasing lab offerings, we need to expand our technological resources to accommodate the increasing number of students. More labs are offered concurrently. Resources are needed at the same time in two different labs. Instructors are rearranging or changing labs, which does allow the best concept sequencing and learning experiences. Presently we only have one lab set of 16 laptop computers. Since Learning Center Commons 2A, LIB 449, LRC 513, and Fine Arts computer classrooms are either no longer available or less available for physics and astronomy computer simulations, we need an additional class set 32 laptop computers. It is important that students are able to do their own lab work.

<b>5. New Goal</b>	Timeline for Completion	Needed resources	Persons Responsible	Obstacles to completion
5. Discontinue the AA in Liberal Arts – Emphasis in Math & Science	Spring 2020	None	Division Chair and Curriculum Representative	

Which of numbered items under the Mission Statement will be furthered if this goal is completed?

Item 1 \_\_\_    Item 2 \_\_\_    Item 3 X    Item 4 X    Item 5 \_\_\_    Item 6 \_\_\_

**Progress on Goal:**

\_\_\_ Completed (Date        )  
 \_\_\_ Revised (Date        )

**Comments:**

The AA in Liberal Arts – Emphasis in Math & Science is now integrated into the new Elementary Teacher Education AS-T, thus making it obsolete.

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**STAFFING REQUEST**

<b><u>Staff Resources:</u></b>				
<b><u>Current Staffing Levels</u></b>				
<u>Full-time Staff</u>		<u>Part-time Staff</u>		
Faculty	9	Faculty	2	
Temporary		Temporary		
Classified	0.92	Classified		
Management		Management		
Project dates of temporary staff:				
<b><u>Request for New/Replacement Staff</u></b>				
	Title of Position	Classification <small>(Faculty, Classified, or Management)</small>	Full or Part Time	New or Replacement
Position 1	Additional lab technician	Classified	PT	New
<p>Justification:</p> <p>The Natural Science division has discussed numerous times the need for an additional PT science technician to support and add a safety element to evening classes and additional student workers who can relieve a cleaning backlog that can take days to make up.</p> <p>Among the lab technician's responsibilities is the preparing of exacting chemical solutions, aseptic bacterial cultures and media, and a wide range of biological specimens, equipment, and supplies every day. The Laboratory Technician is also responsible for ordering all supplies needed for each semester, safe storage of hazardous materials and pathogens, and the disposal of hazardous waste. Most labs begin at 8:00 and the afternoon labs last until 4:10. Labs are also scheduled at night.</p> <p>As more labs are added, the preparation expectations exceeds the hours available to our one Laboratory Technician. Presently many professors set up and clean their own labs, as the Laboratory Technician does not have time to help on all labs.</p>				

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**TECHNOLOGY REQUEST**

Use this section to list any technology needs for your program. It is not necessary to put a price on these items; that will be done by the IT department. If you have more than two technology needs, add rows below.

<u>Technology Need</u>	<u>Justification</u>
Class set of 32 laptop computers	We have increased the number of labs per week. Our Biology P110, Physiology P106, Physics P102A, P102B, P104A, and 104B are battling over the use of our laptop computers as the labs contain computer simulations of genetic variations, body respiratory and metabolic processes, and nuclear and electromagnetism simulations. Presently more computer rooms used in the past by Astronomy and Physics (LIB Commons 2A, LIB 449, LRC 513, Fine Arts) are no longer available or less available. This need will only increase with the addition of future engineering classes.

**FACILITIES REQUEST**

Use this section to list any facilities needs for your program. It is not necessary to put a price on these items; that will be done by the Maintenance & Operations department. If you have more than two facilities needs, add rows below.

<u>Facilities Need</u>	<u>Justification</u>
Electrical outlets put onto north wall of SM-210 and SM-222	The SM modernization of 2008 did not return the lab rooms to their previous state of use. Currently extension cords must run across sinks and walk ways to allow extra microscopes for student use along the back (north) walls of the lab rooms.
Enlarging the conduit in the floor of the Forum SM-102 to enable ELMO relocation.	The Natural Science division (as more classes are being offered) is combining lab classes into single lectures (64 students) in the forum. Science classes need to use the ELMO for class lectures. It is currently inconveniently placed on a student seat area. This is in the way of some students' view of the screen when used. The instructional station (lectern/ELMO) needs to be upgraded similarly to the Theater.
Put in a separate light switch for the front bank of lights in lab rooms.	The SM modernization of 2008 did not return the lab rooms to their previous state of use. Science lectures consistently use Power Point via overhead projector (lights down) supplemented with mathematical equations or biological drawings drawn and explained during lecture/lab (lights up). Previously the lab rooms had a light switch at the front of the room from which the professor could switch on and off the front bank of lights so the student could see additional instruction on the white board.

**PORTERVILLE COLLEGE**  
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Division: Natural Science  
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**SAFETY & SECURITY REQUEST**

Use this section to list any safety & security needs for your program. It is not necessary to put a price on these items; that will be done by the Safety and Security Program Manager. If you have more than two safety & security needs, add rows below.

<u>Safety &amp; Security</u>	<u>Justification</u>
Metal sleeve for door closer on classroom doors	A metal door sleeve can be placed on the door closer so that faculty, staff, or students can certain that the door cannot be opened from the outside. This is a quick fix that can work before a campus-wide door lock down can be punched in.
Four door handles replaced at the labdoor/prep room doorway	Moving students into an interior room is important to their safety in the minutes before a campus-wide lockdown of doors is achieved. Presently the door punch lock is on the wrong side of the door. A perpetrator can get into the inner preparatory room instead of us being able to lock him out. Also students always have access to the prep room where hazardous chemicals are stored and expensive instruments/equipment is kept.



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**BUDGET REQUEST**

	Current Budget	Amount of Change	Revised Total for '19-20
2000 (Student Worker Only)			
4310 Instructional Supplies	\$14,000 + \$2,500 added mid-year.	\$6,000 Based on actual spending of supplies, trends of the last 3 years, see budget narrative to budget committee.	\$20,000
4313-040100 Non-Instructional (Office and Lab Prep)	\$0	In the process of change – was combined with Math	\$750
5560 Hazardous Waste	\$2,200	0	\$2,200
5690 Maintenance/Repairs	\$1,750	0	\$1,750
6419 Equipment	\$3,500	0	\$3,500

**Justification:**

**4000 – Instructional Supplies**

Increase in cost of laboratory specimens, chemicals, media, labware, supplies and other instructional materials, which are required to support quality academic programs, prepare students for transfer to four-year institutions, as well as provide skill and career training.

Instructional Supplies is increasing each year as we add additional classes due to the hiring of an additional FT professor and adjuncts. Presently, the division requests one-time funding for additional labs when added during the school year and the college has been able to financially support these additional classes, even when added at the last minute. These added labs of the last three years have become permanent, so it would be more accurate to budget these in.

One-time instructional/library funding requests are being used for much needed replacement of science equipment such as stirring hot plates, weighing scales, digital thermometers, laptop computers, and physics apparatus. This funding is also used to expand current curriculum for additional and updated labs and replace aging scientific equipment. This funding source has literally saved our ability to perform the labs required in our courses outline of record; however, since these monies must be shared with the entire college, replacement of non-working equipment occurs less than we would wish.

**4000 – Non-Instructional Supplies**

This funds office supplies and lab prep room supplies for faculty and staff.

This includes typical office supplies, toner for our printer, lab gloves for aseptic procedures, etc.

5000- This account funds our biological and chemical waste disposal costs, deionized water service,

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microscope maintenance costs, scientific equipment repair.

6000 - Microscopes need to be replaced on a regular basis. \$3500.00 provides funds to purchase three microscopes each year and to retire the oldest ones on a continual basis. Eliminating the need for the Division to request \$20,000-\$25,000 to replace microscopes every 10 – 15 years.

While not specifically requested in the budget, the division is heavily dependent on expensive equipment, chemicals, and supplies in order to offer science lab classes. In the future, the division may need to request funds to replace defective equipment or to pay for supplies for added classes.