

Laney College
Mathematics Department

Comprehensive
Instructional Program Review Report

October 30, 2015

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Section 1: Introduction

College: Laney College

Discipline, Department or Program: Mathematics

Date: 10/30/2015

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Members of the Validation Team: To be determined

Section 2: Narrative Description of the Discipline, Department or Program

The Laney College Mathematics Department not only teaches students specific knowledge that they will need in their chosen careers but also teaches them critical thinking, reasoning, and working as part of a team—skills that they will need to be competitive in the job market. The department continues to maintain its tradition of embracing new technologies and pedagogical methodologies. The program offers an AS-T in Mathematics.

Section 3: Curriculum

See attached Curriculum Review Report.

Section 4: Assessment

- **How does your discipline, department or program ensure that students are aware of the learning outcomes of the courses and instructional programs in which they are enrolled? Where are your discipline, department or program course and program SLOs published?**

We ensure that our students are aware of the learning outcomes for our courses by posting them on the department's website (www.laney.edu/wp/mathematics), talking about them in class, and including them in our syllabuses. Outcomes from assessments are on the department's website. Links for our SLOs and PLOs can be found in the right-hand side menu of the website. Direct links are provided below.

- Student Learning Outcomes for all courses:
www.laney.edu/wp/mathematics/slo/slos-for-all-laney-math-courses
 - SLO assessment results from Fall 2014 for all courses:
www.laney.edu/wp/mathematics/slo/slos-for-all-laney-math-courses/results-of-fall-2014-assessment
 - Current Program Learning Outcomes (under revision):
www.laney.edu/wp/mathematics/slo/program-learning-outcomes-plos
 - PLO assessment results for the 2011-14 cycle:
www.laney.edu/wp/mathematics/slo/program-learning-outcomes-plos/plo-assessment-results
- **Insert evidence of the approval status for all SLOs for every course offered in your department.**

Dept.	Number	Course Name	Approval Date
MATH	1	Pre-Calculus	4/20/2012
MATH	2	Precalculus with Analytic Geometry	10/18/2013
MATH	003A	Calculus I	4/5/2013
MATH	003B	Calculus II	4/5/2013
MATH	003C	Calculus III	10/18/2013
MATH	003E	Linear Algebra	4/5/2013
MATH	003F	Differential Equations	5/6/2013
MATH	11	Discrete Mathematics	12/2/2011
MATH	13	Introduction to Statistics	11/14/2014
MATH	15	Mathematics for Liberal Arts Students	1/1/2004
MATH	016A	Calculus for Business and the Life and Social Sciences	11/7/2014
MATH	016B	Calculus for Business and the Life and Social Sciences	4/20/2012
MATH	50	Trigonometry	10/18/2013
MATH	201	Elementary Algebra	10/18/2013
MATH	202	Geometry	9/19/2014
MATH	203	Intermediate Algebra	10/18/2013
MATH	208	Mathematics for Laboratory Sciences	10/5/2012

MATH	210A-D	Elementary Algebra (Lab)	12/7/2012
MATH	211A-D	Intermediate Algebra (Lab)	12/7/2012
MATH	220A	Technical Mathematics with Algebra - Part 1 (Lab)	4/21/2014
MATH	220B	Technical Mathematics with Algebra - Part 2 (Lab)	4/21/2014
MATH	220C	Technical Mathematics with Algebra - Part 3 (Lab)	4/21/2014
MATH	220D	Technical Mathematics with Algebra - Part 4 (Lab)	4/21/2014
MATH	220E	Technical Mathematics with Geometry - Part 1 (Lab)	4/21/2014
MATH	220F	Technical Mathematics with Geometry - Part 2 (Lab)	4/21/2014
MATH	220G	Technical Mathematics with Trigonometry (Lab)	4/21/2014
MATH	221	Technical Mathematics	2/8/2013
MATH	250	Arithmetic	3/20/2015
MATH	253	Pre-Algebra	3/20/2015

- **Briefly describe at least three of the most significant changes/improvements your discipline, department or program made in the past three years as a response to course and program assessment results. Please state the course number or program name and assessment cycle (year) for each example and attach the data from the "Status Report" section of TaskStream for these findings.**

Note that we have made very few improvements as direct consequences of individual assessments. This is because many of our assessment results were beyond satisfactory and thus did not warrant action. We did, however, learn several things from the assessment process, and this has been our focus for improvement.

Improvement 1: SLO Day!

Beginning Spring 2015, having decided that we would like to spend more time looking at the results of our assessments rather than just completing them, we focused on "closing the loop" for that year's SLO assessments. We instituted an SLO Day, where we spent a few hours in small group discussions on each of our courses, which allowed us to work collaboratively on course improvements. We had forms that we filled out for each course, with improvements and suggestions for what to do in future semesters. These are posted on the department's website, at www.laney.edu/wp/mathematics/slo/slos-for-all-laney-math-courses/results-of-fall-2014-assessment.

Feedback from this event was overwhelmingly positive, and so we decided to repeat this successful experience every semester from now on.

Improvement 2: Handing out assessment questions and plans one semester ahead

On several forms that were filled out on SLO Day in Spring 2015, it was suggested by several faculty (both full- and part-time) that this be done. We did it for the first time in Spring 2015 (for Fall 2015) but will not know how effective it was until we get feedback at the end of Fall 2015 (or at our Spring 2016 SLO Day).

Improvement 3: Dropbox for math faculty

Also in response to our assessment of SLO Day, and at the request of several faculty members, we have created a Mathematics Department Dropbox, where new faculty or faculty teaching a course

for the first time can find syllabuses from other faculty, course outlines, pacing schedules, handouts, etc.

- **Briefly describe three of the most significant examples of your discipline, department or program plans for course- and/or program-level improvement for the next three years as a result of what you learned during the assessment process. Please state the course number or program name and attach the data from the “Assessment Findings and Action Plan” section for each example.**

Plan 1: Increase awareness of our transfer degree and reinstate our old AA degree.

In assessing our PLOs in Spring 2015, some faculty members included a question about whether the student was planning on obtaining a mathematics degree from Laney College. When we reviewed our PLO assessment, we realized that many of our students were not aware that we offered a degree in mathematics. Furthermore, after some tried to apply for the degree, they reported that the requirements were too narrow and did not fit their goals, even though they had fulfilled all of the mathematics requirements! Upon inspection, we determined that the transfer degree aligns best for those transferring to UCs but not necessarily to other colleges (which is rather odd since its intended purpose is to ease the transfer of students to CSUs). We thus decided that we would reinstate our old AA degree so that anyone who completes the required mathematics courses at Laney College should be able to earn a degree of some kind. (See attached Assessment Findings report from TraskStream.)

Plan 2: Revise our SLOs and PLOs.

This is another result from our SLO Day. We have too many SLOs for some of our courses to adequately assess all of them in a three-year cycle. We are going to revise and refocus our SLOs so that there are three per course.

Plan 3: Introduce an online component in Math 220A-G

Since few students complete the entire Math 220A-G sequence (and those who do may take longer than they wish), we started offering an online component to Math 220A-G in Spring 2015. We created a class using an online homework system (MathXL) that helps students follow this course from 220A to 220G in a more guided way. We believe that if students who struggle with focus and persistence had a bit more help, they might be better able to successfully complete all units. On the MathXL site, there are lecture videos, homework assignments, access to the textbook, worked-out homework problems, interactive help, and access to the instructor of record. (Students can ask the instructor, Kathy Williamson, questions and send the problem they are working on with text to her directly.) She has not made this mandatory yet but is letting students sign up at will and monitoring how they do. In Fall 2014, just a few students (about three) used the MathXL course she made, but they did extremely well and got through more parts than usual. One was a student who she referred to the program because the student had failed one of the harder parts of the course (Math 220F) in Spring 2014. Once the student got on MathXL, her grades improved and she passed 220F with a B! This just showed the instructor that MathXL can be very powerful and help students learn the material they need. (See the attached Status Report for Math 220G, 2013-2014, from TaskStream.)

- **Describe how assessment results for distance education courses and/or programs compare to the results for the corresponding face-to-face classes.**

We combine all results from all sections of each course, regardless of how they are offered (online, hybrid, or face-to-face), so it is impossible for us to provide solid data at this point. However, based on anecdotal data, our hybrid Introduction to Statistics course (Math 13) has typically had better-than-average results than the face-to-face version of the course; but the difference is not significant. The hybrid Intermediate Algebra (Math 203) section usually has results similar to its face-to-face counterparts. Those really are the only two courses that we can offer comparisons for. Our other hybrid courses (Math 210A-D, 211A-D, and 220A-G) are all self-paced courses that have very high assessment results, mainly because students can study for as long as they want before they take their exams and they are allowed one retake. The only exceptions are occasional results from the higher units (210D, 211D and 220E-G), mostly due to the fact that the enrollment in those units is very small. If there are only three students in 220G, let's say, and two of them pass, that makes for only a 67% completion rate; and since our cut-off for success is usually 70%, it does not look good (even though only one student did not pass). In any case, we give the same assessments in all courses, regardless of whether they are offered online. Our distance education courses are held to the same standards as our face-to-face courses.

- **Describe assessment results for courses with multiple sections. Are there similar results in each section?**

This is difficult to answer because we combine all of our results for courses with multiple sections (to provide anonymity), so there is no way for us to provide data here. Typically, Kathy Williamson (our departmental lead for learning assessment) receives combined results for all sections of a course from the designated lead instructor for that course. These lead instructors, who receive data from other instructors teaching the course, generally report that the results do not significantly deviate from one another.

- **Describe your discipline, department or program participation in assessment of institutional level outcomes (ILOs).**

This semester, two of our instructors (Derrick Smith and Christine Will) are working on ILO assessment. Only one of the college's ILOs is mapped to all of our courses (ILO #2, Problem Solving and Critical Thinking), and it is the one that the college is assessing this year. Derrick Smith has created projects for transfer-level mathematics students to demonstrate advanced problem-solving techniques and skills. At the end of the semester, there will be a poster session, with short presentations and a panel of judges, along with prizes (fun, math-y prizes) for the best projects. Christine Will is creating an ILO project for pre-transfer level mathematics students that will also involve either a poster or posting online! (Refer to www.laney.edu/wp/mathematics/slo/ilo-assessment.)

Since this is the only ILO that really targets our courses, we have not participated in ILO assessment in the past.

- **How are your course and/or program level outcomes aligned with the institutional level outcomes? Please describe and attach the “Goal Set Alignment Summary Report” from TaskStream.**

All of our PLOs align with ILO #2, Critical Thinking and Problem Solving. This is what Mathematics is about, after all.

Section 5: Instruction

- **Describe effective and innovative strategies used by faculty to involve students in the learning process.**

Many faculty members find just-in-time classroom practice facilitated by well-designed worksheets an effective teaching strategy to engage students. A department Dropbox has been set up for faculty to share such teaching materials.

Several faculty members are participating in the Laney Smartpen Project, with lecture notes taken by a designated student or by the instructor using a Livescribe Smartpen, whose small camera records what it writes and synchronizes the notes with the audio it also records. Once the notes are posted online, students can replay any portion by selecting that part of the notes. There are group-study activities organized as part of the Laney Smartpen Project. When led by a suitable group leader, this often greatly improves classroom dynamics.

To help algebra students memorize procedures, instructor Christine Will devised a pedagogical strategy where students are asked to invent mnemonic devices based on acronyms the instructor first creates. The efficacy of mnemonic devices that students themselves have helped create proves greater than that of those forced upon them. Based on a similar rationale, Christine Will also asks any student who has failed an exam to fill out a form in which the student identifies areas where improvement is needed and, with the help of the instructor, comes up with an improvement plan that both the student and the instructor agree to. Examples of items included in such plans are: meeting with a counselor, completing a practice exam, or creating a study schedule specifying when the student will be in the Math Lab. Student participation in the design of the plan greatly improves the odds that the plan will be followed through.

- **How has new technology been used by the discipline, department or program to improve student learning?**

Livescribe Smartpens are used. (Refer to the preceding question.)

Instructor Oscar Bascara wrote an online game called “Speed Trig” for his Math 50 (Trigonometry) students, enticing students to practice on values of trigonometric functions at special angles—a topic many students consider dry and boring, but the game aims to make interesting, and students have responded to it very favorably.

Several online homework delivery systems have been adopted by many of our instructors. These include MathXL, MyMathLab, WebAssign, WileyPlus, and MyOpenMath. Some of them feature videos and animations. MathXL is particularly popular in our algebra classes, having been chosen by the department some years ago as the primary platform for algebra courses, in part because of its affordability.

Some instructors experimented with lecturing from a tablet with a stylus, with the display mirrored on a projector screen. The entire lecture content is saved and later posted online for students to access at any time.

- **How does the discipline, department, or program maintain the integrity and consistency of academic standards with all methods of delivery, including face-to-face, hybrid, and distance education courses?**

To minimize possible variations in the academic standards that different methods of delivery may lead to, we have been particularly careful in selecting faculty members who teach hybrid classes and manage self-pace courses (dubbed “lab courses” within the department) in the past three years. Our standards for selecting such faculty is described in Section 6 below.

- **How do you ensure that distance education classes have the same level of rigor as the corresponding face-to-face classes?**

For distance education, the department currently offers only hybrid classes rather than 100% online classes. Hybrid classes require enrolled students to come to campus for in-person exams on prescribed dates multiple times over the course of the semester. Traditionally, grading policies in mathematics courses are very heavy on in-class exams; such an arrangement in hybrid classes ensures that students demonstrate a level of skills comparable to that required of them in a face-to-face class in order to pass the course.

- **Briefly discuss the enrollment trends of your discipline, department or program. Include the following:**

Overall enrollment trends in the past three years

Fall semester census totals in mathematics grew from 2,686 in Fall 2012 to 2,857 in Fall 2014, a 6.37% increase. During the same period, fall semester census totals for the college as a whole sustained a 0.95% decline, from 27,693 down to 27,429.

Likewise, spring semester census totals in mathematics grew from 2,820 in Spring 2013 to 3,089 in Spring 2015, a 9.54% growth, while that for the college as a whole dropped from 28,600 to 28,126, a 1.66% decline.

This reflects a healthy growth in student demand for mathematics courses during this period.

	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Math 1	NA	NA	35	39	39	34	32	35	84
Math 2	39	117	79	18	70	57	20	70	69
Math 3A	130	204	179	126	210	204	145	202	210
Math 3B	43	125	140	55	134	151	76	140	194
Math 3C	NA	83	75	NA	104	65	NA	116	74
Math 3E	NA	45	45	NA	63	40	NA	88	66
Math 3F	NA	49	41	NA	39	51	NA	39	66
Math 11	NA	44	NA	NA	42	NA	NA	58	50
Math 13	207	372	413	156	391	425	150	358	448
Math 15	21	33	32	52	32	39	34	34	61
Math 16A	NA	NA	24	28	26	35	18	38	25

Math 16B	NA	NA	NA	NA	NA	10	NA	NA	11
Math 49	NA	NA	3	NA	NA	NA	NA	NA	1
Math 50	38	109	76	32	121	81	30	111	75
Math 201	108	358	431	91	364	424	117	370	394
Math 202	39	39	34	30	38	31	30	34	35
Math 203	97	399	392	95	425	354	114	423	368
Math 208	NA	22	16	NA	22	29	NA	29	28
Math 210A	27	57	49	11	60	52	22	37	41
Math 210B	13	25	17	6	18	21	9	24	19
Math 210C	9	20	19	3	21	12	5	16	10
Math 210D	4	19	12	4	18	9	6	11	12
Math 211A	16	43	24	9	44	44	9	43	41
Math 211B	3	11	12	2	15	11	6	13	9
Math 211C	2	10	12	4	14	5	2	6	7
Math 211D	5	8	16	4	14	8	4	7	6
Math 220A	5	40	16	2	31	19	4	33	29
Math 220B	1	33	19	2	18	14	1	24	14
Math 220C	0	18	22	3	18	15	0	18	12
Math 220D	0	5	28	1	6	28	1	13	14
Math 220E	1	4	20	5	2	24	4	8	14
Math 200F	1	6	11	2	7	16	2	5	11
Math 220G	1	5	8	1	5	5	4	6	15
Math 221	NA	NA	NA	NA	9	18	NA	19	17
Math 250	59	213	233	70	261	229	42	183	215
Math 253	36	155	256	49	200	274	55	211	292
Math 501	NA	15	31	NA	32	29	NA	35	52
Total	905	2686	2820	900	2913	2863	942	2857	3089

Explanation of student demand (or lack thereof) for specific courses

Student demand for high-level math courses has risen markedly in the past few years, particularly for Math 3B and 3F (in spring semesters), Math 3C and 3E (in fall semesters), Math 11. This suggests a surge in the number of students majoring in engineering or physical sciences in recent semesters.

Enrollment in Math 201 (Elementary Algebra) and Math 203 (Intermediate Algebra) has been flat over the same period. But the demand for Math 253 (Prealgebra) increased steadily, while enrollment in Math 250 (Arithmetic, one level below Math 253) showed considerable volatility. With the Multiple Measures Assessment expected to be in place in Spring 2016, the department is poised to carefully monitor the situation to determine the new paradigm's effect on enrollment in the lowest reaches of our curriculum.

Productivity for the discipline, department, or program compared to the college productivity rate

Productivity for mathematics is consistently higher than the college productivity, as evidenced by the chart below.

	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Mathematics	18.08	18.74	18.95	14.88	17.82	18.41	16.44	17.96	18.20
College	16.76	17.63	17.41	16.40	16.53	16.48	15.05	15.40	15.41

Salient factors, if known, affecting the enrollment and productivity trends you mention above

Productivity is, by definition, half the class size. One factor affecting class size is the number of sections offered. When a huge demand in a course is discerned and a decision is made to open a new section to meet the demand, the new section may not be at full capacity. The result could be a significant increase in overall enrollment in the course, with possibly a slight decrease in the overall productivity of the course, a reasonable trade-off. Ultimately, class size, and thus productivity, is constrained by the physical capacity of our classrooms. For most of the classrooms used for mathematics classes at Laney College, a capacity of 33 is typical. This means that a productivity of around 17 is probably the highest we can reasonably expect.

Are courses scheduled in a manner that meets student needs and demands? How do you know?

With the help of the historical enrollment data kept by the department internally, going as far back as 1997, along with the availability of PROMPT and the BI Tool, the department maintains the tradition of data-driven decision making in enrollment management. Enrollment numbers leading up to the first day of class in past semesters are kept to help interpret numbers as a new semester approaches, in order to make critical decisions regarding the creation or cancelation of sections. Whenever possible, the days and times for the highest-level mathematics classes, which have more limited availability, are scheduled in consultation with the departments within the district with which we share the same students (e.g., physics).

We know that our approach has been successful because many of our higher-level students have been able to enroll in their Physics and Engineering classes as well as their Mathematics classes. (When a time conflict has arisen in the past, we have been expedient in working with other departments and the other three colleges to reschedule conflicting classes long before enrollment was in full swing.)

In the past few years, we have also experimented with late-afternoon course offerings in order to provide more flexibility for students and at the same time make best use of limited classroom availability at the college. Our detailed records clearly indicate that the Mathematics Department could offer more sections of some courses (e.g., Math 13, Introduction to Statistics) which would fill to capacity.

Recommendations and priorities

In light of the anticipated full implementation of Multiple Measures Assessment, it is recommended that the department closely monitor enrollment trends to discern any changes that might result from this new paradigm. A careful study of the effects is necessary to help the department make informed changes as we build schedules for the next few semesters.

In response to what appears to be an upward trend in enrollment in highest the reaches of the mathematics curriculum, it is also recommended that the department experiment with a measured increase of the number of sections offered for some of these courses.

Section 6: Student Success

- Describe course completion rates (*% of students that earned a grade "C" or better or "Credit"*) in the discipline, department, or program for the past three years. Please list each course separately. How do the discipline, department, or program course completion rates compare to the college course completion standard rates?

College course completion standard rates

2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
74.07%	68.72%	66.34%	73.40%	66.34%	67.98%	72.79%	68.95%	69.11%

Department/discipline course completion rates

Course-by-course completion rates for our department, as well as overall completion rates for the other three Mathematics Departments in the district are provided below, for the sake of comparison.

	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Math 1	NA	NA	34.29%	92.31%	63.16%	35.29%	25.81%	29.41%	47.62%
Math 2	64.10%	64.86%	59.49%	38.89%	61.43%	77.19%	55.00%	62.86%	69.57%
Math 3A	69.23%	61.19%	60.67%	76.19%	65.71%	58.33%	68.97%	59.20%	59.05%
Math 3B	69.77%	63.93%	75.00%	70.91%	59.70%	70.86%	75.00%	64.23%	79.79%
Math 3C	NA	77.11%	73.33%	NA	73.08%	73.85%	NA	74.78%	55.41%
Math 3E	NA	77.78%	66.67%	NA	73.02%	67.50%	NA	60.23%	51.52%
Math 3F	NA	85.11%	67.50%	NA	76.32%	88.24%	NA	71.79%	86.36%
Math 11	NA	59.52%	NA	NA	71.43%	NA	NA	72.41%	66.00%
Math 13	58.94%	62.95%	54.99%	59.35%	55.75%	62.59%	71.14%	58.26%	62.05%
Math 15	85.71%	57.58%	71.88%	63.46%	87.50%	74.36%	67.65%	52.94%	60.66%
Math 16A	NA	NA	70.83%	89.29%	57.69%	31.43%	44.44%	89.47%	36.00%
Math 16B	NA	NA	NA	NA	NA	55.56%	NA	NA	81.82%
Math 49	NA	NA	100.00%	NA	NA	NA	NA	NA	100.00%
Math 50	89.47%	65.42%	64.47%	62.50%	65.29%	59.26%	70.00%	68.18%	57.33%
Math 201	52.83%	51.01%	50.23%	51.65%	53.57%	52.83%	51.28%	56.01%	48.35%
Math 202	23.08%	64.10%	52.94%	75.86%	44.74%	61.29%	70.00%	38.24%	50.00%
Math 203	64.58%	56.77%	45.64%	61.05%	49.65%	55.65%	64.60%	50.24%	63.22%
Math 208	NA	84.21%	75.00%	NA	63.64%	75.86%	NA	51.72%	82.14%
Math 210A	53.33%	52.94%	52.94%	75.00%	53.13%	70.37%	88.89%	83.33%	47.37%
Math 210B	75.00%	71.43%	72.73%	33.33%	50.00%	85.71%	83.33%	60.00%	55.56%
Math 210C	42.86%	55.56%	57.14%	33.33%	37.50%	63.64%	33.33%	66.67%	60.00%
Math 210D	100.00%	66.67%	62.50%	50.00%	33.33%	75.00%	33.33%	50.00%	81.82%
Math 211A	55.56%	36.36%	63.64%	60.00%	44.00%	55.56%	33.33%	50.00%	47.06%
Math 211B	0.00%	60.00%	71.43%	100.00%	63.64%	100.00%	50.00%	100.00%	83.33%
Math 211C	NA	75.00%	85.71%	100.00%	80.00%	100.00%	100.00%	75.00%	75.00%
Math 211D	50.00%	0.00%	58.33%	100.00%	63.64%	50.00%	100.00%	80.00%	100.00%
Math 220A	75.00%	88.89%	53.85%	100.00%	93.10%	76.47%	100.00%	90.00%	70.37%

Math 220B	0.00%	77.42%	60.00%	100.00%	82.35%	100.00%	100.00%	85.71%	76.92%
Math 220C	NA	82.35%	66.67%	100.00%	76.47%	85.71%	NA	94.12%	83.33%
Math 220D	NA	60.00%	78.26%	NA	80.00%	95.83%	100.00%	100.00%	92.86%
Math 220E	0.00%	25.00%	77.78%	66.67%	NA	90.48%	75.00%	87.50%	92.31%
Math 220F	0.00%	50.00%	100.00%	100.00%	83.33%	93.75%	100.00%	100.00%	100.00%
Math 220G	100.00%	50.00%	85.71%	NA	75.00%	100.00%	100.00%	80.00%	92.86%
Math 221	NA	NA	NA	NA	44.44%	88.89%	NA	84.21%	94.12%
Math 250	65.52%	48.31%	41.81%	45.71%	31.42%	47.60%	59.52%	51.11%	47.17%
Math 253	63.89%	51.32%	60.16%	69.39%	49.75%	45.99%	41.82%	62.56%	45.70%
Math 501	NA	NA	NA	NA	NA	NA	NA	NA	NA
Laney	61.92%	59.98%	56.09%	64.65%	55.83%	59.55%	62.97%	60.08%	59.33%
Alameda	63.87%	61.18%	55.68%	73.35%	58.28%	56.99%	69.70%	58.73%	54.26%
Berkeley	60.11%	57.63%	58.37%	66.62%	52.48%	55.07%	61.99%	55.10%	55.45%
Merritt	77.17%	49.85%	44.23%	72.09%	48.97%	49.52%	85.82%	53.22%	51.76%

Discussion

Course completion rates in mathematics at Laney College tend to be roughly 10 percentage points below the course completion rates for the college as a whole. However, since completion rates are rather discipline-sensitive, it is more logical to compare course completion rates in mathematics at Laney College to course completion rates in mathematics at the other three colleges. The numbers show that the Laney Mathematics Department consistently led the district in the last three regular terms. Moreover, the numbers for our department exhibit a desirable degree of consistency between regular terms on the one hand and summer sessions on the other, when compared with some of the sister colleges.

- **Are there differences in the course completion rates when disaggregated by age, gender, ethnicity or special population (current or former foster youth, students with disabilities, low income students, veterans)? If so, please describe.**

Remark: This question was added to the template by the District less than two weeks before we were to submit our Program Review—insufficient time to properly analyze the data, which was not all provided anyway. Furthermore, the added questions did not undergo the process of shared governance, and we believe that the District added these questions to try and justify the spending of Equity Funds from by the State (which have remained unused for many months) before the December 31st deadline. Although we agree that these funds should be used, their spending must be justified by *disproportionate impact data*, which is not what the new questions ask. Laney College’s proposed solution is to request the appropriate data from the District; we will then gladly provide an addendum to this Program Review.

- Describe course completion rates in the department for distance education courses (100% online) for the past three years. Please list each course separately. How do the department’s distance education course completion rates compare to the college distance education course completion standard rates?

College distance education course completion standard rates

2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
70.05%	57.60%	50.86%	57.64%	51.30%	54.86%	62.58%	54.77%	51.44%

Department/discipline distance education (100% online) course completion rates:

N/A

Discussion

As of this report, our department has not instituted 100% online mathematics courses for several reasons. Before such classes are to be offered, we believe that a sound system must be put in place at the institutional level whereby the identity of the students taking the 100% online mathematics course can be reliably verified. In a hybrid class, where an in-class midterm and in-class final are given, a valid government ID or Peralta ID can be used to check a student’s identity, and the in-class tests (midterm and final) contain questions in which knowledge of the subject can be verified with shown work (and not just multiple-choice questions). In a 100% online mathematics course, the identity of the person taking the test cannot be verified unless a third-party entity can monitor the student while they take the test (and at all times during the test) and go through verification procedures before even starting the test. We have inquired into a company that does this but did not receive support at the district level to proceed with offering this type of service. Cost may have been a factor (\$25 for online proctoring of a two-hour test; discounted rates for system-wide college/district use), and possibly a liability issue, which was not related to us. If we truly are to consider the needs of the students, we really should investigate this more as a department, as a college, and as a district.

Another reason why our department has not adopted 100% online courses is that companies exist that students can pay to take their online classes for them. Without verification of identity as discussed above, our instructors cannot safeguard against “grade piracy.” We need the support of the district.

- Are there differences in the course completion rates for distance education courses when disaggregated by age, gender, ethnicity or special population (current or former foster youth, students with disabilities, low income students, veterans)? If so, please describe.

See remark above.

- Describe course completion rates in the department for hybrid courses for the past three years. Please list each course separately. How do the department’s hybrid course completion rates compare to the college hybrid course completion standard rates?

College hybrid course completion standard rates

2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
60.54%	58.81%	68.39%	68.33%	58.44%	55.12%	68.27%	62.05%	61.76%

Department/discipline hybrid course completion rates

Course-by-course completion rates for our department, as well as overall completion rates for the other three Mathematics Departments in the district are provided below, for the sake of comparison.

	2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
Math 13	50.62%	51.72%	45.45%	35.29%	51.85%	41.03%	64.00%	51.61%	56.36%
Math 203	NA	57.14%	44.44%	NA	39.39%	37.14%	NA	18.75%	54.55%
Laney	50.62%	54.39%	45.00%	35.29%	45.00%	39.19%	64.00%	34.92%	55.84%
Alameda		58.87%	45.67%	55.90%	39.19%	49.39%	67.35%	54.20%	50.46%
Berkeley		59.32%			32.77%	37.38%	30.95%	40.72%	40.08%
Merritt	NA	NA	NA	NA	NA	NA	NA	NA	NA

Discussion

As pointed out in the above discussion of all courses, completion rates are discipline-sensitive.

The hybrid classes above have been offered for the past 5 years, since 2010; it is therefore a very young program and is evolving every semester. The original courses were mislabeled as being “online” classes (implying 100% online) when they were in fact hybrid courses since tests were administered on campus. (See the discussion in the distance education section above.) The renaming to “hybrid” occurred in Fall 2011 for Math 203 and Spring 2012 for Math 13.

- Are there differences in the course completion rates for hybrid courses when disaggregated by age, gender, ethnicity or special population (current or former foster youth, students with disabilities, low income students, veterans)? If so, please describe.

See remark above.

- **Are there differences in completion rates between face-to-face and distance education/hybrid courses? If so, how does the discipline, department or program deal with this situation? How do you assess the overall effectiveness of distance education/hybrid course?**

There is a relatively small difference, less than 10 percentage points each, in course completion rates between face-to-face and distance education/hybrid courses. More specifically, in Spring 2015, Math 13 had a completion rate for the hybrid section that was 6.49 percentage points lower than the face-to-face sections; and for Math 203, the difference was 9.22 percentage points. Overall, Math 13 had a completion rate for the hybrid section that was 13.00 percentage points lower than the face-to-face sections; and for Math 203, the difference was 12.78 percentage points. These differences are much lower than is generally expected. This seems to suggest that, given a plan to improve delivery, format, and instructor training in hybrid instruction, this kind of class offering is a great option for students who cannot come to campus on a weekly basis. With an increasing number of students juggling work, school, childcare, elderly care, homelessness, single-parent issues, and financial issues, this may be a viable option if the Mathematics Department is adequately funded for tools and training to ensure student success.

A closer look at the data reveals some semesters having a wider difference in course completion rates. For example, the cases of Math 13 in Summer 2013 and Math 203 in Fall 2014 highlight the fact that, if the instructor is not appropriately trained to teach a hybrid mathematics course, completion rates are significantly lower. The Mathematics Department plans to deal with this by initially only choosing those instructors (both part- and full-time) that have had previous training in hybrid mathematics instruction and proven track records (evidenced by completion rates, supporting their ability to properly serve the specific needs of hybrid students). Specific student needs include: initial contact made by the instructor at least one week before school starts; regular communication from/with the instructor; providing for various modalities of learning in an online format; quick email response time (within 24 hours); reminders of important test and homework dates; accommodation of DSPS needs in an online environment; reminders that proof of ID is required for on-campus exams; assistance with online mathematics systems registration and publisher-provided technical help (or lack thereof).

The Mathematics Department will be asking for hybrid instruction training for interested full-time and part-time faculty in the Professional Development part of this document (Section 9) as we believe that the need for more hybrid mathematics classes will be growing over the coming years.

The overall effectiveness of hybrid mathematics courses is excellent for several reasons. One benefit of hybrid courses is that their need for physical classrooms is limited. Hybrid mathematics courses generally only meet for an orientation, a midterm (or midterms) and a final exam; therefore a computer lab or classroom is only needed a few times per semester, rather than 30-50 times for a typical face-to-face class. Given the current shortage of classrooms at the college, this is not a negligible plus. Moreover, late-start hybrid courses address the needs of those students who are unable to receive their financial aid or clear the prerequisites in time, for various reasons. The material is slightly more condensed but remains pedagogically sound, and students do not have to delay their studies by a semester or wait another year to transfer. (Transfer-level mathematics classes fill up very quickly). The popularity of hybrid mathematics courses is clearly demonstrated by the very short time it takes for them to fill to capacity. When the appropriate information is posted early enough on Passport, stating that the class will meet only three times during the semester, hybrid mathematics classes fill up two weeks before the semester begins, with full waitlists.

Plans are being discussed for online student surveys regarding the effectiveness of hybrid mathematics courses and suggestions for improvement. We are also discussing online sign-ups for study groups on campus to be coordinated by the hybrid mathematics instructor, with specific tutors having the desired ability and training; this, too, will require financial support from the college.

- Describe the discipline, department, or program retention rates (*after the first census, % of students earning any grade but a "W" in a course or series of courses*) for the past three years. How does the discipline, department, or program retention rates compare to the college retention standard rates?

College retention standard rates

2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
84.30%	83.71%	79.07%	84.20%	81.31%	79.46%	84.68%	81.53%	81.25%

Discipline, department, or program retention rates

2012 Summer	2012 Fall	2013 Spring	2013 Summer	2013 Fall	2014 Spring	2014 Summer	2014 Fall	2015 Spring
81.60%	79.28%	75.18%	81.81%	76.39%	77.56%	82.59%	77.49%	78.39%

Discussion

Retention rates tend to be slightly higher for summer sessions, presumably because perseverance on the part of the students is easier to attain during a 6-week period than it is during a 17-week period. As far as retention rates for regular semesters are concerned, after a noticeable dip in Spring 2013, the cause of which is uncertain, retention rates in mathematics for regular semesters seem to have followed a discernable upward trend, although this should be carefully interpreted with inherent statistical fluctuations kept in mind.

- Are there differences in the course retention rates when disaggregated by age, gender, ethnicity or special population (current or former foster youth, students with disabilities, low income students, veterans)? If so, please describe.

See remark above.

- What has the discipline, department, or program done to improve course completion and retention rates? What is planned for the next three years?

It is well known that completion and retention rates in pre-collegiate courses are much lower than those of transfer-level courses. Completion and retention rates for pre-collegiate courses tend to be directly affected by the availability and quality of tutoring in our Math Lab. In the wake of the Great Recession, the Math Lab sustained very deep budget cuts, resulting in massive reductions in the level of service

provided, including the loss of Friday hours and shortening of operational hours Monday through Thursday.

In the face of insufficient funding for tutoring that has persisted for many semesters, our Instructional Assistant, Nikolay Shaposhnikov, has done his very best to respond in creative ways to keep the Math Lab afloat. But this is hardly a sustainable situation. The department is desperately in need of a predictable funding stream that is adequate for maintaining an acceptable level of tutoring service.

In the next few years, we plan on advocating for:

- Increased funding to restore the Math Lab functions to pre-recession levels;
 - Funding to provide systematic on-the-job, math-specific training for our tutors;
 - Consistent IT support for the equipment in the Math Lab.
- **What has the discipline, department, or program done to improve the number of degrees and certificates awarded? Include the number of degrees and certificates awarded by year, for the past three years. What is planned for the next three years?**

	2012-13	2013-14	2014-15	Total
Associate in Science in Mathematics for Transfer (AST)		2	3	5
Laney College Associate in Science in Mathematics for Transfer (AST)	3		1	4
Mathematics (AA)	16	15	11	42
Total	19	17	15	51

The above data clearly shows that the local AA degree in mathematics is more popular than the AS-T degree. The AA degree was deactivated some time ago, a decision that we now feel was unwise. An immediate reactivation of the local AA degree is underway. We also plan on polling students in our advanced mathematics courses to better understand the reason behind the low numbers of AS-T degrees awarded since the degree's introduction.

Section 7: Human, Technological, and Physical Resources (incl. equipment and facilities)

- **Describe your current level of staff, including full-time and part-time faculty, classified staff, and other categories of employment.**

Full-time faculty headcount: 11

Part-time faculty headcount: 26

Total FTEF faculty for the discipline, department, or program: 22.29

Full-time/part-time faculty ratio: $8.97/22.29 = 0.40$ by FTEF (0.30 by headcount)

Classified staff headcount: 1

- **Describe your current utilization of facilities and equipment.**

We currently have 25 classrooms in use by mathematics faculty (not including the Math Lab), shared with other departments. Of these, 8 are smart classrooms. In addition, we have 6 faculty using smart carts, 4 using portable projectors, and 3 using overhead projectors.

The Math Lab (G-201) is often used to capacity in its many roles:

- As mathematics tutoring center for all four colleges in the district, it provides 60-120 tutoring sessions per day, serving approximately 80 students each day.
- As technology center, with 80 computers and 5 printers/scanners, it provides computer access for mathematics-related assignments. (This requires helping students with web-related issues and maintaining all of the equipment.)
- As mathematics lending library, it provides access to textbooks and calculators to 80-150 students per day.
- As enrollment center for three self-paced mathematics courses, it conducts 15-50 related transactions per day.
- As testing center, it offers 10 hours of testing per day, with staff managing the testing area and proctoring exams.

The Math Lab technician hires and trains tutors and student workers. By request, we also provide DSPS students with accommodations (including the use of specialized equipment) for taking mathematics tests. In addition, the Math Lab staff supervises students from various learning communities, including CalWorks, EOPS, etc., and provides them with attendance reports.

- **What are your key staffing needs for the next three years? Why? Please provide evidence to support your request such as assessment data, student success data, enrollment data, and/or other factors.**

It is vital that the college hire enough full-time instructors to provide consistency in the full implementation of the myriad of projects the college is currently undertaking and planning over the next few years, including, but not limited to, Multiple Measures Assessment, the Common Assessment, Equity programs/reports, Basic Skills Initiatives, SSSP Projects, CTE grants, etc. We have one full-time faculty who is retiring at the end of Spring 2016, and we are still in the process of backfilling a full-time position lost due to a previous retirement. Mathematics courses are considered gatekeepers for students, and student success (primarily in the first year of college) is a good predictor of persistence. Given the significance of mathematics in the lives of our students, we need to be certain that we have enough people to dedicate time and effort to the myriad needs of our student population and the growing demands of closing equity gaps, raising student success, innovative instruction, the redesigning of our basic skills curriculum, etc. We are currently feeling very understaffed in terms of man hours that we are able to contribute to the college at large.

Additionally, we need to hire a sufficient number of tutors to staff the Math Lab. Every year the tutor budget seems insufficient and even though the minimum wage for student tutors has increased SIGNIFICANTLY within the last year, our budget has not! Our lab tech, Nick Shaposhnikov, has repeatedly asked for an increase in funding for student tutors and although it always seems like we are going to get more funding, we don't (everyone seems to be in agreement that we should have a larger tutor budget). Last semester, he was asked to provide the amount of money needed to sustain the math lab at a functioning level (to keep tutors as he estimates we need—please contact him for further details, if desired) and we have received about 1/3 of what he asked for. We are currently forced to limit the time that our tutors can spend with students and even with these constraints, students have to wait a (sometimes unreasonably) long time to meet with a tutor. There have been a number of complaints, but we are doing the best we can with the resources we have been provided. Nick has even come up with some creative ways to deal with this issue, but really, the college needs to make tutoring more of a priority and make sure our open tutoring labs are funded at a reasonable level. There are also many places in the Equity report where tutoring and “embedded tutoring” are mentioned as proposed solutions to equity issues, but we are nowhere near having the required resources to address those ideas when even our basic tutoring needs are not being met.

We need consistent IT support to maintain and repair the Math Lab equipment when needed. For example, some of the computers are missing key software that needs to be updated on a regular basis. In addition, we have a computer in G-202 that is out of commission due to a virus infection.

As a college, we need to value our students enough to provide them with up-to-date and clean facilities. The current level of cleanliness is simply unacceptable. Classrooms never seem to be cleaned, resulting in stained walls, dirty floors and desks, and whiteboards which remain dirty even after erasing. A shortage of custodial staff has resulted in a situation in which our faculty are embarrassed to teach here or conduct interviews of new potential faculty. We would like to provide an environment to our students which is conducive to learning and shows that we take pride in our campus.

- **What are your key technological needs for the next three years? Why? Please provide evidence to support your request such as assessment data, student success data, enrollment data, and/or other factors.**

The computers in our computer classrooms (G-203 and G-205) will need to be replaced within the next 3 years. They are getting old. We will also need the computers in the Math Lab (G-201) to be replaced as well (same age).

Every classroom that we teach in needs to be a smart classroom. Faculty are utilizing more and more technology in the classroom when it is made available to them. In the absence of more smart classrooms, we need dedicated laptops for math instructors to use in their classrooms, along with projectors.

Several faculty have been involved in the Smartpen Program, pencasting their lectures. This provides students with an interactive video of the lecture, which can be key in helping students who need to review or slow down the pace of the lecture; a common student complaint in mathematics classes is that we go too fast or cover too much material in too short of a time. These pencasts have been utilized in peer-led study groups and can be used by students who miss lectures for any reason. This innovative approach has led to increased student success in coursework. Also, we have an instructor who utilizes them as multimedia assignments prior to attempting homework in hybrid courses.

In addition to pencasting, some instructors are experimenting with flipped classrooms, with students watching lectures at home and completing “homework” in class with faculty supervision and guidance. This type of pedagogical approach requires enough computers for each student to have access to their own.

Smart classrooms are needed for graphic displays of geometric objects for higher-level courses such as Calculus. Smart cart management has been unsuccessful, as the smart carts are only available during limited hours and faculty must have time before and after class to pick up and drop off the carts. Access to the smart carts has also proven elusive.

- **What are your key facilities needs for the next three years? Why? Please provide evidence to support your request such as assessment data, student success data, enrollment data, and/or other factors.**

The tables and chairs in our current classrooms are horrible! They get stuck in the up or down position and cannot be adjusted very easily. They are also very large, making them difficult to move around and to put in classrooms; although a classroom might have a capacity of 35, we sometimes cannot get 35 desks into the classroom because they are large and the chairs are connected to the desks! We could use NEW chairs and desks, but PLEASE ask the faculty to be part of the decision making process (or please ask us to be part of the process). We are certain that we can find good desks and chairs that are not connected that would work much better than what we currently have. Clean classrooms are an important facilities requirement for our department. The classrooms are extremely dirty, with black ink spots on the walls and whiteboards that are so dirty that it is difficult to write on them without getting covered in black residue. The erasers also need to be changed and

cleaned from time to time (they are caked with black debris). The waste baskets need to be tended to on a regular basis and the floors need to be cleaned regularly.

We must to provide our faculty with an adequate supply of whiteboard erasers and markers. Instructors consistently have to buy their own supplies. Several of our faculty are allergic to the whiteboard markers, so alternative markers need to be made available to instructors upon request.

We have broken windows in G-207, which is a hazard. There is water damage in G-210, so engineering services are necessary. The current condition of our facilities, including classrooms and bathrooms, is not at an acceptable functional level, and it displays a lack of respect for our students. The women's bathroom nearest G-201, for instance, has a missing stall door, missing toilet paper rolls, etc., resulting in students waiting for a single stall and being late to classes. These spaces need to be maintained.

We need to keep up with the landscaping near G-201. It seems that plants are being replaced once a year, but they are not well maintained in between. Plants either get overgrown, leading to rat infestation, or die. The Math Lab is also constantly battling ants. This is a direct result of a lack of custodial services to the area.

The Prioritized Resource Requests Summary for Additional (New) Resources is attached as Appendix A.

Section 8: Community, Institutional, and Professional Engagement and Partnerships

- **Discuss how faculty and staff have engaged in institutional efforts such as committees, presentations, and departmental activities. Please list the committees that full-time faculty participate in.**

Full-time mathematics faculty participate in the following committees:

- Learning Assessment Committee
- Curriculum Committee
- College Prioritization Committee
- College Council
- College Budget Advisory Committee
- District Academic Senate
- District Education Committee
- District Planning and Budgeting Council
- Basic Skills Initiative Committee
- Faculty Senate (2 senators and the vice president)
- Basic Skills Math Redesign Committee
- ILO Assessment Committee (Math Department)
- Various hiring committees
- Various tenure review committees

One of our faculty also happens to be the Tenure Review Facilitator for the college. Because the Mathematics Department is at the heart of the SSSP, Equity, and Basic Skills state reports and plans (as are the English and ESOL Departments), we anticipate that our participation will also be requested in developing and revising these reports and their implementation.

- **Discuss how faculty and staff have engaged in community activities, partnerships and/or collaborations.**

Currently, two of our full-time mathematics faculty have been granted release time to investigate the use of zero-unit courses for the possible purpose of redesigning our basic skills sequence. We have reached out to instructors at Diablo Valley College, City College of San Francisco, and Foothill College to help in this effort.

We also have a mathematics instructor who is working on creating a successful Math Jam at Laney College, and we have contacted another instructor who set up Math Jams at both Las Positas College and Foothill College. She has offered to help us with ours by way of inviting us to observe the Math Jams at those colleges.

We have been working with the Machine Technology Department to help support some of their special programs (Industrial Maintenance, Introduction to Industrial Maintenance, and a new program that is set to start this semester in partnership with a high school from Treasure Island).

Last academic year we worked with mathematics faculty across the district to help create an articulated path for high school students in Oakland to make their transition to Laney College smoother by using multiple measures to more accurately place them into our courses.

We have recently been contacted by Kimberly King from the Psychology Department who wants to connect us with someone at Cal State Los Angeles and tell us about their developmental/remedial mathematics learning communities and supplemental instruction program. She thinks a partnership with them could help us create more success in our own program.

We have also worked with other committees to create state-mandated reports that require mathematics representation (Basic Skills Initiative, Equity, etc.).

- **Discuss how adjunct faculty members are included in departmental training, discussions, and decision-making.**

This semester we have set monthly department meetings to communicate more with all faculty, including adjuncts. We have set up an SLO Day (which we started last semester) where we can sit down and talk about our classes and the assessments we have completed. We also recently set up a Dropbox for the Mathematics Department which we hope will serve to help new faculty (or faculty new to teaching particular courses) set up their classes. It has a folder for each of our classes with past syllabuses, pacing schedules, handouts, course outlines, etc. We have been working hard to make sure that all of our new faculty this semester are “well taken care of” by matching new faculty with experienced full-time faculty who check in on them (via email or phone, or meet with them) on a regular basis. We are also hoping that after our department meetings we will have opportunities to have lunch and talk about anything that we want to discuss as a department. In working on this Program Review, we made use of Google Docs for each of the goals listed in Section 10 to increase participation from ALL faculty who want to contribute in the shaping of our departmental in the next three years.

Section 9: Professional Development

- **Please describe the professional development needs of your discipline or department. Include specifics such as training in the use of classroom technology, use of online resources, instructional methods, cultural sensitivity, faculty mentoring, etc.**

Training in the use of smart classrooms, including projecting monitor displays and printed pages to the screen, and use of the Smartpens: We would like to make our lectures accessible to students outside of the classroom and using pencasts, we could post lectures from class online. We could also use smartboards to record the whiteboard (if they functioned correctly and we learned how to use that aspect of them) during lecture, save them and post them online. Being able to project the computer, documents and slides improve the flow of lectures as well (and allow for more time in class to be devoted to group work, class work, working out example problems, etc.).

Training in the use of tools developed by faculty, including statistics teaching resources: Mr. Lepowsky has created many Excel spreadsheets that can be used by faculty to create problems, work out problems and show interesting aspects of how some statistical formulas work. It would be great to get some training on how to create our own files, as well as learn about more resources that can be used within the statistics classroom. We might also want to look into other statistics software that could aid in statistics instruction.

Mentoring new full-time and part-time instructors by experienced faculty members: We would like to create more opportunities for new faculty to get trained on best practices, how to teach topics that might be difficult for them and to discuss important developments in the community college math scene.

Workshop to train instructors in assisting non-native English speaking students in mastering mathematical language, especially statistics.

Professional Development Day activities for instructors to share innovative pedagogical ideas with colleagues: We have requested Christine Will and Rina Santos to give a demonstration on how to use smartpens in the classroom and how to get lectures recorded and put online.

Professional Development Day activities for instructors to share what they have learned in conferences: If instructors have learned about interesting and important developments in math that relate to us, it would be great to have them be able to share these ideas with the rest of the department.

Equity, SSSP, BSI: It would be nice to have something during our flex days that addresses issues in Equity, SSSP and BSI. It sometimes feels like we do not really know what is going on with these programs and funding. An explanation of each, college-wide, and transparency about the process and monies available would be greatly appreciated.

How to use a tutor in the classroom: If we are able to get tutors in our classes (our equity report states all over that we need or should be using embedded tutoring in the classroom), we need to

know how best to use them (not for copying or picking stuff up from IMC, grading, etc.). This might take adjustments in how our classrooms are set up and it would be great to have some training on how to do that.

- **How do you train new instructors in the use of distance education platforms? Is this sufficient?**

We currently do not have a formal training program in place. Instructors are informally referred to colleagues who have previously taught online and hybrid courses. This has worked in the past, but we want to develop a more formal system of training and write a handbook of best practices. It is difficult to find time to develop such a manual and we need to identify an expert who is willing to create such a document.

Section 10: Discipline, Department or Program Goals and Activities

Briefly describe and discuss the discipline, department or program goals and activities for the next three years, including the rationale for setting these goals. **NOTE: Progress in attaining these goals will be assessed in subsequent years through annual program updates (APUs).**

The Alignment of Goals template is attached as Appendix B.

- **Curriculum**

- Goal #1: Re-evaluate the content of our Calculus sequence.

Activities: Review the content of calculus courses at nearby four-year institutions.

Rationale: If several four-year schools have revamped their calculus curriculum, our transfer students need to be similarly prepared.

- Goal #2: Re-examine the purpose of Math 221.

Activities: Work with CTE departments to understand exactly what their needs are in a technical mathematics course. Determine whether enrollment is sufficient to continue offering the course.

Rationale: Although Math 221 was developed in partnership with some CTE departments, it is not well suited to other CTE programs. Some CTE departments have expressed the view that Math 221 covers too much in one semester for their students. Many of the targeted students are not enrolling in the course. Additionally, there has been a request from CTE faculty to make a new 2-semester course that corresponds to Math 221.

- Goal #3: Update Course Outlines of Record (CORs) on a regular basis.

Activities: Create a three-year plan for updating CORs. Execute the plan.

Rationale: Some of our courses' CORs have fallen through the cracks and are outdated.

- Goal #4: Obtain C-ID designation for all courses with C-ID descriptors.

Activities: Update some of our CORs to make get C-ID designation whenever possible.

Rationale: Math 2, 3C, 3F, and 50 still have not gotten full C-ID approval. C-ID has a descriptor for Discrete Mathematics; our Math 11 needs to be submitted.

- Goal #5: Increase hybrid offerings.

Activities: Look at what other colleges offer as hybrid classes; decide whether it's pedagogically sound; if it is, create Distance Education Addenda for the courses in question; and include hybrid versions of those in future schedules. Identify and train faculty in distance education standards, best practices, and tools.

Rationale: This would meet the needs of our diverse student population; more students seem to be juggling more in their lives, so we should do whatever we can to accommodate them. This would also increase departmental enrollment (FTES) with very little use of classrooms.

- Goal #6: Increase the use of pencasting.

Activities: Create pencasts for a variety of courses, and make them available to all students.

Rationale: This addresses accessibility issues and accommodates more learning styles. Pencasts could serve as as-needed for review of specific skills. They would help students when they have to miss class. Seeing and hearing how an instructor writes mathematics would hopefully improve students' study and note-taking skills.

- Goal #7: Redesign the developmental mathematics curriculum.

Activities: Explore non-credit programs at other colleges and related technology. Attend relevant conferences to learn about the current research and best practices.

Rationale: Our basic skills curriculum suffers from low student success and retention rates as well as persistence problems. Repeatability of courses also are an issue for students. We hope these can offer just-in-time remediation for students to avoid course repeats (and fees) when possible.

- Goal #8: Re-activate the old AA degree.

Activities: Re-activate it through the Curriculum Committee.

Rationale: Many of our students have enough units to get the old AA degree but do not meet the requirements for the AS-T degree.

- **Assessment**

- Goal #9: Complete assessment cycles for SLOs in all courses.

Activities: Increase departmental discussion of assessment results, as our co-chairs have already begun to encourage and organize.

Rationale: We must do this, as required by the ACCJC.

- Goal #10: Change our Program Learning Outcomes (PLOs).

Activities: Meet and discuss what the new PLOs should look like and how we can make them connect to our capstone courses (or all courses that align with our AS-T degree)

Rationale: The current ones are not general enough to apply to all of our capstone courses. We could do a better job of alignment, while keeping the same degree of rigor and relevancy.

- Goal #11: Change the number of Student Learning Outcomes (SLOs) to three per class.

Activities: We need to meet and discuss how to make these changes and make sure that we agree about what SLOs should be in place for each course. We also need to make sure that capstone courses for our AS-T degree have SLOs that align with our PLOs well.

Rationale: To have a more meaningful analysis of our courses, we need to focus on fewer SLOs. We would like to have 3 because we are on a 3 year cycle and this would allow us to: assess an SLO in the fall and meet to discuss results and plan for improvement in the spring. We think that this will create a way for us to have a more meaningful analysis of our results and focus without being overwhelmed.

- **Instruction**

- Goal #12: Increase instructor hours in the Math Lab, and reinstate Friday hours.

Activities: Secure more funding.

Rationale: The Math 220 sequence has seen a resurgence of enrollment thanks to increased cooperation with the Machine Technology Department and other vocational programs. Grading and other related activities associated with all these self-paced classes, which includes the self-paced algebra sequence, often overwhelms the staff, at its current levels. In addition, we often see students experience very long wait times before they are able to meet with a tutor; and, even though the Math Lab has not been open on Friday for several years, students continue to show up on Fridays, only to leave without the help they need.

- Goal #13: Hire additional instructional assistants for the Math Lab.

Activities: Request additional staff positions.

Rationale: Peer tutoring is useful, but our tutors quickly transfer, and we need someone who can really tutor statistics.

- Goal #14: Increase the number of documents available to instructors in our Dropbox.

Activities: Ask instructors to submit documents from their courses on a regular basis to a point person in the math department who can spend time uploading documents into the Dropbox.

Rationale: This gives instructors (especially those new to teaching or new to teaching a particular course) more support to teach their courses smoothly. We want pacing charts, extra handouts, syllabuses, sample quiz/test questions, homework sheets, etc.

- Goal #15: Make use of in-class tutors.

Activities: Get money for tutors in our developmental math classrooms. Get training on how best to use tutors in the classroom.

Rationale: One thing that you will notice if you read the Equity report is that it has been suggested that we use embedded tutoring in our developmental math courses in order to help close the equity gaps among various populations. If we are to do this, we need money to hire more tutors.

- **Student Success**

- Goal #17: Increase computer access for students.

Activities: Dedicate G-203 to the Math Lab, and secure funding for at least one tutor to supervise the room.

Rationale: A significant, and growing, percentage of instructors are assigning homework that is internet based. The computers in G 201 are fully used during peak hours of student activity.

- Goal #18: Create instructor-directed study groups with tutors (especially for hybrid courses).

Activities: We don't exactly know HOW to do this, but we need to meet with people to figure out if this is possible and what will need to be done.

Rationale: We currently have something similar being offered for a cohort of Math 220ABCDEFG students through the industrial maintenance program and it is INCREDIBLY successful! We believe that this could be helpful for other courses as well.

- Goal #19: Create in-house tutor training program.

Activities: Meet with Laney tutoring coordinator Jackie Graves to find out what we need to do to get this going. Identify funding sources needed to support the operation.

Rationale: The tutor training course is excellent, but it lacks targeted mathematical content and training for math students. Though skills needed for tutoring English and Math do overlap, there are specific issues that come up with math tutoring that need to be addressed (like motivation, math anxiety, how to approach word problems, etc.). We used to pay tutors to attend meetings where we could address issues that student tutors have while working and to teach them different ways of approaching different problems, as well as techniques and characteristics of good math tutoring. We would like to do that again and improve the tutoring available to all math students on campus.

- **Professional Development, Community, Institutional and Professional Engagement and Partnerships**

- Goal #20: Increase attendance at conferences.

Activities: Request professional development funds for more instructors (Full-time and part-time) to attend mathematics/education conferences.

Rationale: This is to further raise our awareness of best practices in mathematics education.

- Goal #21: Investigate zero-unit courses.

Activities: Connect with Foothill College, Diablo Valley College, and San Jacinto College.

Rationale: We want to see what other colleges are creating with their zero unit courses and learn all we can before we create ours.

- Goal #22: Search for and study successful and innovative designs of algebra-rich accelerated pathways at other colleges around the state.

Activities: Connect with Santa Ana College and CSU Los Angeles.

Rationale: Santa Ana College appears to have in place an accelerated math pathway that retains much of the traditional algebra content. This is unlike the several well-known accelerated pathways that specifically take non-STEM students to transfer-level statistics in a manner that deemphasizes algebra. The department would like to study the approach taken by Santa Ana College and other similar algebra-rich approaches that might exist, to help us design an accelerated pathway that best suits the department's needs. Another place our attention has been directed to, thanks to Laney Psychology instructor Kimberly King, is CSU Los Angeles, where innovations in basic skills math instruction we might benefit from exist.

Appendix A

Prioritized Resource Requests Summary for Additional (New) Resources

College: Laney College

Discipline, Department or Program: Mathematics

Contact Person: Katherine Williamson or new department chair

Date: 10/30/2015

Resource Category	Description	Priority Ranking (1 – 5, etc.)	Estimated Cost	Justification (page # in the program review narrative report)
Human Resources: Faculty	Two full-time faculty	1	\$140,000	page 21
Human Resources: Classified	One additional instructional assistant	1	\$50,000	page 21
Human Resources: Student Workers	Lots	1	\$50,000 (in addition to what we go this year, every year)	page 21
Technology	New computers for G-201, G-202, and G-203; tablets for all instructors; projectors; (duplex) printers	1	\$110,070	page 22
Equipment	See attached requests	Varying priorities, mostly 1	\$29,711.40	pages 9, 26, 27
Supplies	Markers (including hypoallergenic ones), erasers, whiteboard cleaning supplies, etc.	1	\$1000 every semester on a regular basis	pages 22, 23
Facilities	New desk/chairs (that don't "sink") for the classrooms, additional furniture for the Math Lab or G-205 and G-	1	unsure	pages 22, 23

	208? A new building (long-term wish)? Repair of windows and wall; cleaning of classrooms (floors, walls, whiteboards, windows, desks, etc.); repair of bathrooms; more frequent cleaning of the “stinky” stairwell; landscaping			
Professional Development	Training in hybrid instruction. Training in the use of smart classrooms, including projecting monitor displays and printed pages to the screen, and use of the Smartpens, training in the use of tools developed by faculty, including statistics teaching resources, mentoring new full-time and part-time instructors by experienced faculty members, professional Development Day activities for instructors to share innovative pedagogical ideas with colleagues, professional Development Day activities for instructors to share what they have learned in conferences, Information about Equity, SSSP, BSI, how to use a tutor in the classroom	Varying urgency	Unknown	pages 26, 27
Other (specify)				

Appendix B

Alignment of Goals

College: Laney College

Discipline, Department or Program: Mathematics

Contact Person: Katherine Williamson or new department chair

Date: 10/30/2015

Discipline, Department or Program Goal	College Goal	PCCD Goal and Institutional Objective
#1: Re-evaluate the content of our Calculus sequence.	1	A and C
#2: Re-examine the purpose of Math 221.	1	A and C
#3: Update Course Outlines of Record (CORs) on a regular basis.	1	A and C
#4: Obtain C-ID designation for all courses with C-ID descriptors.	1	A and C
#5: Increase hybrid offerings.	1	A and C
#6: Increase the use of pencasting.	1	A and C
#7: Redesign the developmental mathematics curriculum.	1	A and C
#8: Re-activate the old AA degree.	1	A and C
#9: Complete assessment cycles for SLOs in all courses.	2 and 3	
#10: Change our Program Learning Outcomes (PLOs).	2 and 3	
#11: Change the number of Student Learning Outcomes (SLOs) to three per class.	2 and 3	
#12: Increase instructor hours in the Math Lab, and reinstate Friday hours.	1	A
#13: Hire additional instructional assistants for the Math Lab.	4	
#14: Increase the number of documents available to instructors in our Dropbox.		
#15: Make use of in-class tutors.	4	
#16: Increase computer access for students.	4	
#17: Create instructor-directed study groups with tutors (especially for hybrid courses).	4	
#18: Create in-house tutor training program.		

#19: Increase attendance at conferences.	4	D
#20: Investigate zero-unit courses.	1	A and D
#21: Search for and study successful and innovative designs of algebra-rich accelerated pathways at other colleges around the state.	1	A and D

Curriculum Review Report - Laney College

Department: Mathematics

Date of Report: 10/09/15

List Faculty Involved in Developing this Report: Hungwen Chang, Kathy Williamson, Fred Bourgoin

Current Courses

1. Copy the four fields below from the Active Course List				2. Has this course been updated within the last three years?		3. If course has not been updated for three or more years, do you plan to update or deactivate it?		4. If course has not been updated for three or more years, complete the two fields below.	
Discipline	Course Number	Course Name	Date of Last Update	Yes	No	Update	Deactivate	Who will submit an update or deactivation for this course?	When will update or deactivation be submitted?
MATH	001	Pre-Calculus	04/20/12		✓	✓		Fred Bourgoin	Fall 2015
MATH	002	Precalculus with Analytic Geometry	10/18/13	✓					
MATH	003A	Calculus I	04/05/13	✓					
MATH	003B	Calculus II	04/05/13	✓					
MATH	003C	Calculus III	10/18/13	✓					
MATH	003E	Linear Algebra	04/05/13	✓					
MATH	003F	Differential Equations	05/06/13	✓					
MATH	011	Discrete Mathematics	12/02/11		✓	✓		Derrick Smith	Fall 2015
MATH	013	Introduction to Statistics	11/14/14	✓					
MATH	015	Mathematics for Liberal Arts Students	01/01/14	✓					
MATH	016A	Calculus for Business and the Life and Social Sciences	11/07/14	✓					

MATH	016B	Calculus for Business and the Life and Social Sciences	04/20/12		✓	✓		David Ross	Fall 2015
MATH	050	Trigonometry	10/18/13	✓					
MATH	201	Elementary Algebra	10/18/13	✓					
MATH	202	Geometry	09/19/14	✓					
MATH	203	Intermediate Algebra	10/18/13	✓					
MATH	208	Mathematics for Laboratory Sciences	10/05/12	✓					
MATH	210A-D	Elementary Algebra (Lab)	12/07/12	✓					
MATH	211A-D	Intermediate Algebra (Lab)	12/07/12	✓					
MATH	220A	Technical Mathematics with Algebra – Part 1 (Lab)	04/21/14	✓					
MATH	220B	Technical Mathematics with Algebra – Part 2 (Lab)	04/21/14	✓					
MATH	220C	Technical Mathematics with Algebra – Part 3 (Lab)	04/21/14	✓					
MATH	220D	Technical Mathematics with Algebra – Part 3 (Lab)	04/21/14	✓					
MATH	220E	Technical Mathematics with Geometry – Part 1 (Lab)	04/21/14	✓					
MATH	220F	Technical Mathematics with Geometry – Part 2 (Lab)	04/21/14	✓					
MATH	220G	Technical Mathematics with Trigonometry (Lab)	04/21/14	✓					
MATH	221	Technical Mathematics	02/08/13	✓					
MATH	250	Arithmetic	03/20/15	✓					
MATH	253	Pre-Algebra	03/20/15	✓					

Active Programs

<p>5. To complete the field below, search programs in CurricUNET: http://www.curricUNET.com/pccd/</p>	<p>6. To complete this field, view the WR program of study in CurricUNET. Check each course in the program for the DE addendum</p> <p>What percentage of the units in this program of study can be completed online?</p>	<p>7. To complete this field, check to be sure each course in the program is active and updated.</p> <p>What changes are needed to this program?</p>	<p>8. If changes are needed to the program, complete the two fields below.</p> <p>Who will submit a modification of this program?</p> <p>When will the program modification be submitted?</p>
<p>Name of Program</p> <p>Associate in Science Degree in Mathematics for Transfer</p>	<p>0-7% (at Laney)</p>	<p>None</p>	<p>n/a</p> <p>n/a</p>

9. To respond to the question below, a) conduct conversations with faculty in your department, and b) refer to courses and programs that your program already has in process in CurricUNET.

What are the discipline, department or program of study plans for curriculum improvement (i.e., courses or programs to be developed, enhanced, or deactivated)?

Course Updates: As indicated above, we need to update the CORs for 001, 011 (pending in CurricUNET), and 016B in Fall 2015 because they are over three years old. We will also update the CORs for 003A, 003B, 003E, and 221 in Spring 2016 for the same reason.

C-ID Designation: Some of our courses were denied C-ID designation (002, 003C, 050) or only given conditional approval (003F). These issues will be resolved by the end of AY 15-16; we will address feedback provided by C-ID reviewers and resubmit those courses with the help of Articulation Officer Laura Bollentino. We also plan to seek C-ID designation for MATH 011. Despite our frustration with C-ID reviewers (providing inconsistent feedback about a course, approving a course at BCC but denying the same course at Laney, being outright petty with language in some CORs, etc.), we are committed to obtaining C-ID designation for as many of our courses as possible.

Status Alignment: Laney Curriculum Specialist Iolani Sodny-Gereben has identified many inconsistencies in the status (active vs. inactive) of our courses in CurricUNET, in PROMT, and at the CCCC Office. We will work with her, the Curriculum Committee, and District Curriculum Specialist Amany ElMasry to correct all such inconsistencies.

Reactivation of Our AA Degree: Our old AA degree was deactivated when our AS-T degree was approved. This was a mistake, as many students satisfy the AA degree requirements but not the more stringent, non-math requirements of the AS-T degree. We will work with the Curriculum Committee to reactivate the AA degree, thus awarding more degrees overall.

Distance Education: As of now, only four of our active courses have Distance Education Addenda (013, 203, 210A-D, 211A-D). We will take advantage of the expertise we have within the department to explore the possibility of offering more hybrid options in courses for which we deem it pedagogically sound.

2011-2014 Assessment Cycle

Assessment Findings

Assessment Measure Result per Assessment Measure

Program Level Outcomes

Student Learning Outcome

Outcome 1: Solving Equations

Solve application problems using mathematical models

▼ Assessment Measure: PLO #1 (Math 3E): Solving Equations Program level; Direct - Exam

Details/description of the assessment measure/method: The instructor will give a test problem that targets this PLO. See attached documentation. There is only one instructor for this course (only one section offered) and he has written the question himself for this PLO.

Describe the standards for successful performance on this SLO: Students receiving at least 14 points out of a possible 20 points for this problem will be considered successful (if at least 70% of the problem is done correctly, it is a success).

What percentage of students should successfully meet the standards for this SLO?: We hope that at least 70% of the students in this class will successfully meet the standards for this PLO.

When do you plan to assess this outcome? (indicate the semester and year): Spring 2012

Supporting Attachments:

 Math 3e PLO Spring 2012 Hubbard.docx (Word Document (Open XML))

PLO #1 Question and Rubric

Assessment Measure Results for PLO #1 (Math 3E): Solving Equations


Summary of Assessment Measure Results: The instructor for Math 3E (Linear Algebra) gave a single question to his entire class in an exam (see attachments in Assessment Plan for details). There were 37 total students who took the exam and 25 of them received at least 7 points out of 10 (a passing grade) on the particular question.

Results: Target Performance: Not Met

What percentage of students successfully met the standards for this SLO?: 25 out of 37 which is about 67.6%. Though we did not meet the goal of at least 70%, we came very close!

Was the assessment information sampled in any way? If so, please describe.: There is only one section of Math 3E and the entire class participated in the assessment.

Substantiating Evidence:

 3EResults.doc (Microsoft Word)

Results in detail for PLO #1

This Assessment Measure Results is associated with the following Actions:

PLO #1

(Action Plan; 2011-2014 Assessment Cycle)

Outcome 2: Graphs

Interpret and/or create geometric representations of relations

Assessment Measure: PLO #2

Program level; Direct - Exam


Details/description of the assessment measure/method: A common exam question will be given to the 3E course. There is only one section. For details of the question, please refer to the attached document that includes both the question and rubric.

Describe the standards for successful performance on this SLO: A student must receive at least 70% credit for the entire problem. Please see the rubric for details on how it will be assessed.

What percentage of students should successfully meet the standards for this SLO?: We would like at least 70% of the class to successfully answer the exam question.

When do you plan to assess this outcome? (indicate the semester and year): Spring 2012

Supporting Attachments:

 Math PLO #2 Math 3F Sp 2012.docx (Word Document (Open XML))
PLO #2 Question and Rubric

Assessment Measure Results for PLO #2

Summary of Assessment Measure Results: Students in Math 3F were given an exam question that targeted this PLO (see attached documentation in the Assessment Plan).

Results: Target Performance: Exceeded


What percentage of students successfully met the standards for this SLO?: Out of 48 students ...

34 earned full credit
6 earned at most 70%
4 earned at most 50%
4 earned at most 10%

= > 40/48, or over 83%, earning at least 70% credit - i.e. over 83% success.

Was the assessment information sampled in any way? If so, please describe.:
No, there is only one section of Math 3F and all students enrolled were presented with this exam question.

Substantiating Evidence:

 Math PLO #2 Math 3F Sp 2012 Results.doc (Microsoft Word)
Summary of PLO #2 Results (Math 3F)

This Assessment Measure Results is associated with the following Actions:

PLO #2

(Action Plan; 2011-2014 Assessment Cycle)

Outcome 3: Numerical Analysis

Use numerical data to analyze functions

Assessment Measure: Outcome 3

Program level; Direct - Exam


Details/description of the assessment measure/method: A common exam question will be given to the 3C courses. There are two sections. For details of the question, please refer to the attached document that includes both the question and rubric.

Describe the standards for successful performance on this SLO: A student must receive at least 70% credit for the entire problem. Please see the rubric for details on how it will be assessed.

What percentage of students should successfully meet the standards for this SLO?: We would like at least 70% of the class to successfully answer the exam question.

When do you plan to assess this outcome? (indicate the semester and year): Spring 2012

Supporting Attachments:

 Math 3C PLO 3.pdf (Adobe Acrobat Document)
PLO #3 Question and Rubric

Assessment Measure Results for Outcome 3


Summary of Assessment Measure Results: Students in both sections of Math 3C were given the same two questions (see attachment in the Assessment Plan). Of the 54 who chose to answer the questions, 31 earned at least 7 points out of 10.

Results: Target Performance: Not Met

What percentage of students successfully met the standards for this SLO?:
Only 57% (31 out of 54) of students who participated earned a passing grade.

Was the assessment information sampled in any way? If so, please describe.:
Both sections of Math 3C participated, so there as no sampling.

Substantiating Evidence:

 Math PLO #3 Math 3C Sp 2012 Results (Adobe Acrobat Document)
Summary of PLO #3 results (Math 3C)

This Assessment Measure Results is associated with the following Actions:

PLO #3
(Action Plan; 2011-2014 Assessment Cycle)

Overall Recommendations

No text specified

Overall Reflection

No text specified

Last Modified: 06/07/2012 10:38:38 AM PDT

2013-2014 Assessment Cycle

Status Report

Action Statuses

Math 220ABCDEFGG Outcome Set

Student Learning Outcome

220A: Order of Operations

Perform operations on signed numbers including square roots and exponents in the correct order.

▼ Action: Math 220A Assessment

Use of assessment results/action plan: We are very happy with our results and just hope to continue to have 100% success!

I believe that these results are largely due to our allowing students to retake tests and quizzes if they don't pass. Maybe this says something about what we should be doing in all of our classes? Something to talk about!

Implementation Plan (timeline): Spring 2014 (talk about test retakes)

Key/Responsible Personnel: Kathy Williamson

Priority: Low

Status for Math 220A Assessment

No Status Added

220B: Word Problems

Solve word problems leading to equations in one variable.

▼ Action: Math 220B Assessment

Use of assessment results/action plan: We are very pleased with our results and again, I believe that such good results are due to the fact that we allow students to retake tests that they fail.

One thing that I would like to work on for next semester is getting students enrolled by the end of the semester who actually complete the unit! Communication for this class is difficult since there are no formal class meetings. I will need to be creative (since most students do NOT check their peralta email!).

Implementation Plan (timeline): spring 2014

Key/Responsible Personnel: Kathy Williamson

Priority: Low

Status for Math 220B Assessment

No Status Added

220C: Systems of Equations

Solve word problems leading to systems of equations.

▼ Action: Math 220C Assessment

Use of assessment results/action plan: We were again, very pleased with our results for this SLO. I again believe that this high rate of passing is directly related to us allowing students to retake quizzes and tests.

A further thought is that students who were enrolled in the Industrial Maintenance Program had individual

instruction (by Kathi Roisen) and they did exceptionally well on all of the SLOs for 220A,B and C. Students not enrolled in the IM program also did very well in all 3 units, but the IM program made up a huge chunk of the students in general!

Implementation Plan (timeline): Spring 2014

(discuss results with faculty and talk about: letting students retake tests and possibly discussions led by tutors or instructors or instructional aides for students not in IM and perhaps in the other Math Lab courses - 210 and 211)

Key/Responsible Personnel: Kathy Williamson

Priority: Low

Status for Math 220C Assessment

No Status Added

220D: Scientific Notation

Convert between scientific and standard notation and multiply and divide numbers written in scientific notation.

▼ **Action:** Math 220D Assessment #1

Use of assessment results/action plan: We are very pleased with our results.

Implementation Plan (timeline): none

Key/Responsible Personnel: none

Priority: Low

Status for Math 220D Assessment #1

No Status Added

220D: Quadratic Equations

Solve quadratic equations and associated word problems.

▼ **Action:** Math 220D Assessment #2

Use of assessment results/action plan: For this unit, we did not technically meet our goal, however the sample size was pretty small, so it's really very, very close to our goal. 2 out of 3 is pretty close to 70%, so I'm not really concerned too much. If there are only 3 students, the only way to make it to 70% is by having ALL of them pass. That only 1 didn't is pretty good.

I will report it to the Math Department and see if there are any suggestions (I don't want to just try to add more homework on this because of 1 person!).

Implementation Plan (timeline): none

Key/Responsible Personnel: none

Priority: Low

Status for Math 220D Assessment #2

No Status Added

220E: Area and Perimeter

Calculate areas and perimeters of various polygons and circles and associated applications

▼ **Action:** Math 220E Assessment

Use of assessment results/action plan: We are pleased with our results, but there are very few students enrolled in 220E this semester. Previous semesters it was not so low - I expect the enrollment for E to be much higher in the Spring.

Recently this class was approved to satisfy the AA requirement, so I believe that there will be more students completing the entire course soon (some students only need to complete through D to get a certificate)

Implementation Plan (timeline): none

Key/Responsible Personnel: none

Priority: Low

Status for Math 220E Assessment

No Status Added

220F: Solids

Calculate surface areas and volumes of solid figures including prisms, pyramids, cylinders, spheres, and cones.

▼ Action: Math 220F Assessment

Use of assessment results/action plan: We are very pleased with our results!

At this point (after completing the assessments for 220ABCD and E) I feel like this class is very successful, but there are not a lot of students who are enrolled at the higher units. Also, pretty much NO ONE completes the whole class in one semester. No one did this semester. Many completed ABC. I wonder if this will change now that 220 can satisfy the AA degree requirements in math? That might be something interesting to follow!

Implementation Plan (timeline): none

Key/Responsible Personnel: none

Priority: Low

Status for Math 220F Assessment

No Status Added

220G: Angle Measure

Measure angles in degrees and radians and convert between the two measures.

▼ Action: Math 220G Assessment #1

Use of assessment results/action plan: We were very pleased, but not surprised by our results. This problem is not very difficult and students rarely struggle with this concept.

Implementation Plan (timeline): none

Key/Responsible Personnel: none

Priority: Low

Status for Math 220G Assessment #1

No Status Added

Solving Triangles

Solve triangles (right and non-right) and associated word problems.

▼ Action: Math 220G Assessment #2

Use of assessment results/action plan: I'm a bit surprised by these results, but at the end of the semester, many students are just trying to finish and don't usually retake unless they have to. It is possible to pass the class without getting these two problems correct.

The first problem (about right triangles) was solved easily by all of the students who participated. The second problem uses the law of cosines, which is much more difficult, but I am still surprised that 1 of them skipped it entirely! There is a quiz that targets only solving these types of triangles (non-right) and they all passed that quiz.

Another thing to note is that there is such a small sample. I believe that if we looked at more students who have completed G in the past, we would have a better idea of what the pass rate actually is. With 3 students we could only get 33%, 67% or 100%.

In any case, I don't really know what more to do, as we do have a quiz on this and they all passed it. Maybe if it were somehow more relevant to their personal lives or work, it would be better. I don't know when or which CTE fields use this kind of problem solving.

We do want to think about:

- 1) How can we get more students enrolled in this course?
- 2) How can we get more students to complete more units of this course?
- 3) How can we get more students to complete more of this course quicker?

Implementation Plan (timeline): Spring 2014

Key/Responsible Personnel: Kathy Williamson

Priority: Medium

Status for Math 220G Assessment #2

Current Status: Not started

Describe the progress you've made on the implementation of your previous action plan. Attach any evidence of the changes made.: We had a few ideas on how to improve success through this course. As I mentioned in the Action Plan, there are very few students who complete all 7 parts of this course. As a result, we have started offering a lecture version of this class (Math 221). It's still in its infancy stage, so we are eagerly awaiting assessment results for that course.

In addition, I have created an online MathXL homework course that follows this course from 220A to 220G. I believe that if students who struggle with focus and persistence had a bit more help, they might be better able to successfully complete all units. On the MathXL site, there are lecture videos, homework assignments, access to the textbook, worked out homework problems, interactive help and access to me (students can ask me questions and send the problem they are working on with text to me directly). I have not made this mandatory yet, but am letting students sign up at will and monitoring how they do.

Have the changes you made resulted in an improvement in student learning? Explain. If you have evidence of improvement (and we hope you do), please attach it here: If things go smoothly, I will offer this as a regular part of the Math 220 course, starting Spring 2015. Hopefully this will help students get through the entire course more quickly.

Status Summary


No text specified

Summary of Next Steps

No text specified

Last Modified: 03/09/2015 11:21:31 PM PDT

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At-a-Glance - Goal Set Alignment Summary Report



Organizational Area(s) within Laney College aligned with Institutional Learning Outcomes 2012 (Laney College)

Legend: Mapped Assessment Measure Added

Organizational Area	Institutional Learning Outcomes			
	Communication Students will effectively express and exchange ideas through various modes of communication.	Critical Thinking and Problem Solving Students will be able to think critically and solve problems by identifying relevant information, evaluating alternatives, synthesizing findings and implementing effective solutions.	Career Technical Skills Students will demonstrate technical skills in keeping with the demands of their field of study.	Personal and Professional Development Students will develop their knowledge, skills and abilities for personal and/or professional growth, health and well being.
Laney College » Business, Math & Sciences » Mathematics Mathematics 1 Precalculus				
Laney College » Business, Math & Sciences » Mathematics Mathematics 11				
Laney College » Business, Math & Sciences » Mathematics Mathematics 13				
Laney College » Business, Math & Sciences » Mathematics Mathematics 15				
Laney College » Business, Math & Sciences » Mathematics Mathematics 16A Calculus for Business and Life/Social Sciences				
Laney College » Business, Math & Sciences » Mathematics Mathematics 2				
Laney College » Business, Math & Sciences » Mathematics Mathematics 201				

Laney College » Business, Math & Sciences » Mathematics Mathematics 202	
Laney College » Business, Math & Sciences » Mathematics Mathematics 203	
Laney College » Business, Math & Sciences » Mathematics Mathematics 208	
Laney College » Business, Math & Sciences » Mathematics Mathematics 210A	
Laney College » Business, Math & Sciences » Mathematics Mathematics 210ABCD	
Laney College » Business, Math & Sciences » Mathematics Mathematics 210B	
Laney College » Business, Math & Sciences » Mathematics Mathematics 210C	
Laney College » Business, Math & Sciences » Mathematics Mathematics 210D	
Laney College » Business, Math & Sciences » Mathematics Mathematics 211A	
Laney College » Business, Math & Sciences » Mathematics Mathematics 211ABCD	
Laney College » Business, Math & Sciences » Mathematics Mathematics 211B	
Laney College » Business, Math & Sciences » Mathematics Mathematics 211C	
Laney College » Business, Math & Sciences » Mathematics Mathematics 211D	

Laney College » Business, Math & Sciences » Mathematics Mathematics 220A			
Laney College » Business, Math & Sciences » Mathematics Mathematics 220ABCDEFG			
Laney College » Business, Math & Sciences » Mathematics Mathematics 220B			
Laney College » Business, Math & Sciences » Mathematics Mathematics 220G			
Laney College » Business, Math & Sciences » Mathematics Mathematics 221			
Laney College » Business, Math & Sciences » Mathematics Mathematics 253			
Laney College » Business, Math & Sciences » Mathematics Mathematics 3A			
Laney College » Business, Math & Sciences » Mathematics Mathematics 3B			
Laney College » Business, Math & Sciences » Mathematics Mathematics 3C			
Laney College » Business, Math & Sciences » Mathematics Mathematics 3E			
Laney College » Business, Math & Sciences » Mathematics Mathematics 3F			
Laney College » Business, Math & Sciences » Mathematics Mathematics 50			
Laney College » Business, Math & Sciences » Mathematics Mathematics AA			

SUMMARY:	1 Mapped 1 Measures Added	33 Mapped 32 Measures Added	3 Mapped 3 Measures Added	1 Mapped 1 Measures Added
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created with  taskstream

FORM A: Request for New Full-Time Faculty Position

Laney College

Mathematics Instructor [Replacement for Loretta Jolin (Scheu)]

[1.0 FTEF]

Data source: BI Tool

Data for Fall: 2015

Criterion 1: Percent of Full-Time Faculty in Department

Number of Full-Time Equivalent Faculty (FTEF)	
Contract Faculty	8.13
Hourly Faculty	13.11
Percent of Full-Time Faculty / Total FTEF	37%
Faculty Head Count	
Head Count Contract Faculty	11
Head Count Hourly Faculty	26

Narrative:

As the Mathematics Department continues to grow, we continue to need more faculty; while we hire new hourly faculty almost every semester, the continuity and commitment (to our students and the college as a whole) guaranteed by new contract faculty is what is needed most. We have been fortunate to hire two faculty in the past two years, but our ratio of contract to hourly faculty still lags behind similarly sized Mathematics Departments in the region and across the state. Although we very much appreciate the energy and dedication of our adjunct faculty, they cannot afford to participate in all that is required of the department (Equity, SSSP, Basic Skills, Multiple-Measures Assessment, Gateway to College, Foundation Skills Program, UBAKA, CTE-related programs, etc.). Only contract faculty can be expected to do this kind of work on a regular basis.

Criterion 2: Semester-End Department Enrollment Pattern for Last Three Years

	2012-2013			2013-2014			2014-2015		
	Enrolled	Retained	%	Enrolled	Retained	%	Enrolled	Retained	%
Fall	2686	2045	76%	2913	2175	75%	2857	2131	75%
Spring	2820	2061	73%	2863	2175	76%	3089	2353	76%
Total	5506	4106	75%	5776	4350	75%	5946	4484	75%

Narrative:

As the above data shows, the Mathematics Department has steadily been growing over the last three years, contributing more FTES to the college (at a time when the college and the district are continually forced to borrow FTES from summer sessions). We have reached full capacity in terms of classroom availability and space, but with the help of a recent contract hire, we are expanding our hybrid offerings. There is thus "room" for the department to continue to grow, especially in our Introduction to Statistics course (Math 13). We have also seen an increase in demand for higher-level classes. Our retention rates have remained steady, even as we continue to serve an increasing number of students.

Criterion 3: Percent of FTEF in Comparable Departments at Other PCCD Colleges

	COA	BCC	Laney	Merritt
Contract	3.58	5.40	8.13	3.48
Hourly + Extra	6.82	12.13	13.95	4.11
Total	10.40	17.53	22.08	7.59
% Contract/Total	34%	31%	37%	46%

Narrative:

Laney College being the flagship of PCCD, and its Mathematics Department leading the other three in FTES and productivity, it is surprising that we find ourselves far behind Merritt College and close to College of Alameda in the above percentages. With Berkeley City College growing very rapidly, it is essential that we further strengthen our ranks in order to remain the flagship that we are.

Criterion 4: Position Is a Replacement

Replacement for: Loretta Jolin (Scheu)

✓	Retirement
	Resignation
	Death
	Intradistrict Transfer
	Other (explain):

Criterion 5: Position Needed to Start a New Program or Enhance Existing One

Narrative:

Loretta Scheu has been our departmental lead for Statistics in the years since the retirement of Bill Lepowsky. Her retirement at the end of the spring semester, 2016, will create a void in an area of our department that is booming.

Criterion 6: SLO/PLO/ILO Assessment Results

[TaskStream "At-a-Glance Report" attached]

Narrative (How do your assessment results show that you need this position?)

Our curriculum consists of 23 courses, and we offer 70-80 sections per semester. Given the monumental task of assessing learning in that many courses and sections, we have done an excellent job so far. The loss of one contract faculty, who happens to have been the assessment lead faculty for our most popular course will make extremely difficult to maintain our standards of assessment.

Criterion 7: Additional Justification

Narrative:

The Laney College Mathematics Department remains the largest department in the entire district, by various measures. Yet it is not the one with the largest ranks. The retirement of Loreta Scheu will make extremely challenging to maintain our level of activity and quality of instruction.

TaskStream At-a-Glance Report

Laney College Mathematics Department

Organizational Area	Standing Req.'s	2012-2013 Assessment Cycle				2013-2014 Assessment Cycle				2014-2015 Assessment Cycle			
		Assess. Plan	Assess. Findings	Action Plan	Status Report	Assess. Plan	Assess. Findings	Action Plan	Status Report	Assess. Plan	Assess. Findings	Action Plan	Status Report
Mathematics 1	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 11	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 13	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 15	Reviewed	Not Started	Not Started	Not Started	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 16B	Reviewed	Not Started	Not Started	Not Started	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 2	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 201	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 202	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 203	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 208	Reviewed	Not Started	Not Started	Not Started	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 210ABCD	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 211ABCD	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 220ABCDEFG	Reviewed	Not Started	Not Started	Not Started	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Shared	Shared	Not Started
Mathematics 221	Reviewed	Not Started	Not Started	Not Started	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 250	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 253	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 3A	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 3B	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 3C	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 3E	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 3F	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started
Mathematics 50	Reviewed	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started	Reviewed	Reviewed	Reviewed	Not Started

FORM B: INSTRUCTIONAL EQUIPMENT AND LIBRARY MATERIALS

DEPT NAME: Mathematics	DEPT CONTACT: Katherine Williamson
EMAIL: kwilliamson@peralta.edu	Phone: (510) 464 - 3448

TYPE OF REQUEST: EQUIPMENT IT (COMPUTER / SOFTWARE) REPAIRS

PRIORITY: 1 HIGHEST 2 HIGH 3 IMPORTANT 4 LOW

ITEM NAME	ITEM DESCRIPTION	QTY
Laser Printer	HP LaserJet Enterprise 600 Printer M603dn (CE995A)	2

COSTS: PURCHASES & REPAIRS		COSTS: ITEMIZED ACCESSORIES & INSTALLATION			
Unit Cost:	\$1,829.69	Description	Unit Price	Qty	Unit Total
Quantity:	2	HP CE390XC, Black Toner Cartridge	\$374.99	4	\$1,499.96
Unit Cost Total:	\$3,659.38				\$ -
Accessories & Installation Cost Total (from right):	\$1,499.96				\$ -
Subtotal:	\$5,159.34				\$ -
Tax (9.75%):	\$503.04				\$ -
Shipping:					\$ -
Total:	\$5,662.38	Accessory & Installation Cost Total =			\$1,499.96

JUSTIFICATION: ADDRESS AT LEAST ONE OF THE FOLLOWING CRITERIA

- (1) Health & Safety / ADA / Legal Mandate; (2) Urgency of Need;
 (3) Student Impact / Students Served; or (4) Program Viability

FORM B: INSTRUCTIONAL EQUIPMENT AND LIBRARY MATERIALS

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TYPE OF REQUEST: EQUIPMENT IT (COMPUTER / SOFTWARE) REPAIRS

PRIORITY: 1 HIGHEST 2 HIGH 3 IMPORTANT 4 LOW

ITEM NAME	ITEM DESCRIPTION	QTY
Document camera	Elmo P10 VISUAL PRESENTER	2

COSTS: PURCHASES & REPAIRS		COSTS: ITEMIZED ACCESSORIES & INSTALLATION			
Unit Cost:	\$1,691.00	Description	Unit Price	Qty	Unit Total
Quantity:	2	Replmnt lamp, unknown type, price estimate:	\$365.23	2	\$730.46
Unit Cost Total:	\$3,382.00				
Accessories & Installation Cost Total (from right):	\$730.46				\$ -
Subtotal:	\$4,112.46				\$ -
Tax (9.75%):	\$400.96				\$ -
Shipping:					\$ -
Total:	\$4,513.42	Accessory & Installation Cost Total =			\$730.46

JUSTIFICATION: ADDRESS AT LEAST ONE OF THE FOLLOWING CRITERIA
(1) Health & Safety / ADA / Legal Mandate; (2) Urgency of Need;
(3) Student Impact / Students Served; or (4) Program Viability

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TYPE OF REQUEST: EQUIPMENT IT (COMPUTER / SOFTWARE) REPAIRS

PRIORITY: 1 HIGHEST 2 HIGH 3 IMPORTANT 4 LOW

ITEM NAME	ITEM DESCRIPTION	QTY
Projector	Epson PowerLite 1985WU LCD Projector	2

COSTS: PURCHASES & REPAIRS		COSTS: ITEMIZED ACCESSORIES & INSTALLATION			
Unit Cost:	\$1,862.99	Description	Unit Price	Qty	Unit Total
Quantity:	2	Replacement lamp, 280W, unknown type, price estimate:	\$300.00	2	\$600.00
Unit Cost Total:	\$3,725.98				
Accessories & Installation Cost Total (from right):	\$600.00				\$ -
Subtotal:	\$4,325.98				\$ -
Tax (9.75%):	\$421.78				\$ -
Shipping:					\$ -
Total:	\$4,747.76	Accessory & Installation Cost Total =			\$600.00

JUSTIFICATION: ADDRESS AT LEAST ONE OF THE FOLLOWING CRITERIA
(1) Health & Safety / ADA / Legal Mandate; (2) Urgency of Need;
(3) Student Impact / Students Served; or (4) Program Viability

FORM B: INSTRUCTIONAL EQUIPMENT AND LIBRARY MATERIALS

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TYPE OF REQUEST: EQUIPMENT IT (COMPUTER / SOFTWARE) REPAIRS

PRIORITY: 1 HIGHEST 2 HIGH 3 IMPORTANT 4 LOW

ITEM NAME	ITEM DESCRIPTION	QTY
Document Camera	Elmo P10-ELMO Digital Document Camera	4

COSTS: PURCHASES & REPAIRS		COSTS: ITEMIZED ACCESSORIES & INSTALLATION			
Unit Cost:	\$1,691.00	Description	Unit Price	Qty	Unit Total
Quantity:	4	3 Yr Warranty Rpr Consumer Electronics (1500-2499.99) DOP	\$96.99	2	\$193.98
Unit Cost Total:	\$6,764.00	Replmnt lamp, unknown type, price estimate:	365.23	2	730.46
Accessories & Installation Cost Total (from right):	\$1,658.42	Padded Soft Carry Case (131.99) and Base Light Box (101.99)	234	2	468
Subtotal:	\$8,422.42	Cart	132.99	2	265.98
Tax (9.75%):	\$503.04	Accessory & Installation Cost Total =			
Shipping:	\$200	\$1,658.42			
Total:	\$9,125.46				

JUSTIFICATION: ADDRESS AT LEAST ONE OF THE FOLLOWING CRITERIA
(1) Health & Safety / ADA / Legal Mandate; (2) Urgency of Need;
(3) Student Impact / Students Served; or (4) Program Viability

Justification: #3 Student Impact/Students Served

This goes along with the request for Smartpens. These projectors are needed in use with the Smartpens. Math Instructors using a smartpen allows a student to “relive the lecture” which means that during a lecture the students can pay more attention to the reasoning behind the steps or processes rather than getting down every single fact. The students can also during lecture, try a problem at the same time the other students are trying a problem versus waiting until after they finish copying the notes especially if they copy notes very slowly. By the time they are done, most students are done trying the problem and they must now copy the new notes without the benefit of trying the problem with the other students which contributes to them falling behind. The smartpen also allows the advanced student to review the detail of it all for advanced study or even get ahead if a math instructor posts their smartpen lectures ahead of time. Moreover, if any of the students were to miss a day, they could click on the URL and know exactly what sections and problems were done that day. The number of smartpens asked for will accommodate 10 fulltime math instructors at present and 10 parttime instructors (our whole department is 30 instructors) to encourage anyone more participation. These smartpen lectures from all math instructors given an assigned smartpen will be posted on the math website where all students can benefit from any math lecture depending on their learning style.

FORM B: INSTRUCTIONAL EQUIPMENT AND LIBRARY MATERIALS

DEPT NAME: Mathematics	DEPT CONTACT: Katherine Williamson
EMAIL: kwilliamson@peralta.edu	Phone: (510) 464 - 3448

TYPE OF REQUEST: **EQUIPMENT** **IT (COMPUTER / SOFTWARE)** **REPAIRS**

PRIORITY: **1 HIGHEST** **2 HIGH** **3 IMPORTANT** **4 LOW**

ITEM NAME	ITEM DESCRIPTION	QTY
Smart Pens	The latest version of the smartpen Echo 8GB SmartPen 3 or Livescribe 3 SmartPen	20

COSTS: PURCHASES & REPAIRS		COSTS: ITEMIZED ACCESSORIES & INSTALLATION			
Unit Cost:	\$200.00	Description	Unit Price	Qty	Unit Total
Quantity:	20	smartpens notebooks 4 pack	\$25.00	20	\$500.00
Unit Cost Total:	\$4,000.00	ink cartridges for Smartpens	\$7	50	\$350
Accessories & Installation Cost Total (from right):	\$1,500.00	Smartpen Tablet	\$100	2	\$200
Subtotal:	\$5,159.34	A4 Grid Notebook, 4-Pack, (Numbers 1-4)	\$25	10	\$250
Tax (9.75%):	\$503.04	A5 Grid Notebook, 4-Pack, (Numbers 1-4)	\$20	10	\$200
Shipping:	\$100	Accessory & Installation Cost Total =			
Total:	\$5,662.38	\$1,500.00			

JUSTIFICATION: ADDRESS AT LEAST ONE OF THE FOLLOWING CRITERIA

- (1) Health & Safety / ADA / Legal Mandate; (2) Urgency of Need;
 (3) Student Impact / Students Served; or (4) Program Viability

Justification: #3 Student Impact/Students Served

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TYPE OF REQUEST: EQUIPMENT IT (COMPUTER / SOFTWARE) REPAIRS

PRIORITY: 1 HIGHEST 2 HIGH 3 IMPORTANT 4 LOW

ITEM NAME	ITEM DESCRIPTION	QTY
Computer	Need to be current, anything I put now will be obsolete	90

COSTS: PURCHASES & REPAIRS		COSTS: ITEMIZED ACCESSORIES & INSTALLATION			
Unit Cost:	\$1,000.00	Description	Unit Price	Qty	Unit Total
Quantity:	90				
Unit Cost Total:	\$90,000.00				
Accessories & Installation Cost Total (from right):					\$ -
Subtotal:	\$90,000.00				\$ -
Tax (9.75%):	\$8,775.00				
Shipping:					\$ -
Total:	\$98,775.00				
		Accessory & Installation Cost Total =			

JUSTIFICATION: ADDRESS AT LEAST ONE OF THE FOLLOWING CRITERIA

- (1) Health & Safety / ADA / Legal Mandate; (2) Urgency of Need;
 (3) Student Impact / Students Served; or (4) Program Viability

(3 and 4) We need our computers to be current so that students can access the internet to complete homework and we can use computers in the classroom to facilitate learning. This is partially an access issue (equity) for students and just a basic need of a contemporary mathematics department. We depend more and more on technology to teach our courses and therefore need to stay current with our technology needs. These computers are to replace computers in our computer classrooms (G-203 and G-205) as well as computers in our drop-in tutorial facility (The Math Lab, G-201).

FORM B: INSTRUCTIONAL EQUIPMENT AND LIBRARY MATERIALS

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TYPE OF REQUEST: EQUIPMENT IT (COMPUTER / SOFTWARE) REPAIRS

PRIORITY: 1 HIGHEST 2 HIGH 3 IMPORTANT 4 LOW

ITEM NAME	ITEM DESCRIPTION	QTY
Laptop	ThinkPad W541 Mobile Workstation	4

COSTS: PURCHASES & REPAIRS		COSTS: ITEMIZED ACCESSORIES & INSTALLATION			
Unit Cost:	\$2,000.00	Description	Unit Price	Qty	Unit Total
Quantity:	4	Microsoft office	\$230.00	4	\$920.00
Unit Cost Total:	\$8,000.00	Carrying Case	\$43	4	\$172.00
Accessories & Installation Cost Total (from right):	\$2,292.00	ThinkPad Ultra Dock 170W	\$300	4	\$1,200.00
Subtotal:	\$10,292.00				\$ -
Tax (9.75%):	\$1,003.47	Accessory & Installation Cost Total =			
Shipping:	Free!	\$2,292.00			
Total:	\$11,295.47				

JUSTIFICATION: ADDRESS AT LEAST ONE OF THE FOLLOWING CRITERIA

- (1) Health & Safety / ADA / Legal Mandate; (2) Urgency of Need;
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