

UNIT PLAN

Unit: Mathematics

Cluster: SMNAHK

Planning Year: 2014-15

NARRATIVE: UNIT PLAN

The Unit Plan ties program review to resource allocation. For this first segment of the Unit Plan, write a narrative analysis of the fiscal assumptions and needs for your division/department for the upcoming year (e.g. Continued categorical funding, support staff not funded, etc.).

The Mathematics Division is working under the assumptions that funding for the 2014-15 planning year may improve over the 2013-14 planning year. Lack of funding for support services such as tutoring and DSPS testing has had an adverse effect on mathematics students. We are hoping increased funding will restore some of these support services. There is a definite need for a Math content specialist for the Student Success centers on both campuses.

The Division has been asked to offer more course sections to increase FTES. However, if we are asked to increase our FTES to meet our target enrollments for the upcoming year we will be limited by lack of faculty and facilities. We are currently down 4 full-time faculty and lack adequate classroom space.

ANNUAL PROGRAM PLANNING WORKSHEET (APPW)

Program: Mathematics

Planning Year: 2014-15

Last Year CPPR Completed: 2012

Unit: Mathematics

Cluster: SMKNAH

Next Scheduled CPPR: 2017

NARRATIVE: APPW

Use the following narrative outline and be brief and concise:

I. Program-Level Outcomes: List the outcomes established for your program.

The Mathematics program outcomes are:

- *Prepare students for Mathematics A.S. or A.S.-Transfer Degree.*
- *Build competencies in basic mathematical skills to help students achieve their academic goals*
- *Prepare students to earn an AA/AS Degree*
- *Prepare students to transfer to a four-year institution*

II. Program Contributions to Institutional Goals, Institutional Objectives, and/or Institutional Learning Outcomes: Identify how your program, within the past year, has helped the District achieve its Institutional Goals and Objectives, and/or how it has helped students achieve specific Institutional Learning Outcomes (ILOs), and provide data or evidence that demonstrates the progress. Please refer back to the Planning Documents section of this document.

The Mathematics Division continues to support Institutional Objective 1.5 "Increase basic skills course success and improvement rates by 2% annually."

Summary:

March 12, 2013- Discussed changes to the Math 007 course outline and possibly combining Math003 and 007, analyzing the pros and cons. It was decided that piloting a common assessment and final for Math 007 for spring 2013 was too ambitious. However, work is beginning toward that end with finals placed on the group drive and Math 007 instructors identifying problems/features they like.

March 22, 2013- Planning meeting for Math 007 common final. A decision was made to meet with North County Instructors in April to brainstorm ideas. The format will be a combination of multiple choice/short answer. Grading and analysis will also be discussed including anonymity that needs to be built in so no instructor feels threatened.

April 18/19, 2013- Meeting took place with Math 007 instructors regarding the common final. Several expressed an interest in participating on a grading team. A grading rubric needs to be decided before the final is given. There was concern about getting grades processed in a timely manner. The groups will reconvene during flex week to continue discussion.

April 30, 2013- Meeting to Discuss the Math 007 common final and decision was made to have both multiple choice and free response questions. Sample questions will be sent to Rich by May 24th. Analysis regarding the fall survey of students. 80% said they intend to take Elementary Algebra, of those, 48% said their goal was to get an AA/AS degree and another 48% said their goal was to transfer. Discussion ensued regarding end of year student survey.

May 2013- Survey was given to Math 007 students at the end of the semester.

August 13, 2013-Meeting held to begin development of the Math 007 common final. It was decided to have a multiple choice portion and a free response portion. There will be rubric developed for the free response section.

September 5, 2013- The Math 007 common final was brought to the Division for discussion and approval. The Division agreed to accept and pilot the common final for fall 2013.

September 23, 2013- Math 007 survey results distributed to the Math 007 instructors for analysis and formulation of new objectives and action steps in the 2014-17 Strategic Plan.

October 1, 2013- Scoring rubric for the Math 007 Common Final distributed to Math 007 faculty for feedback and review.

December 4, 2013 – Assessment/Placement procedures reviewed and determination made to assess all students intending to enroll in a mathematics course. (Math 003 success rates have been negatively affected by students who self-place into Math 003 rather than assessing and placing into the appropriate higher level course.)

December 5, 2013- Math 007 Common Final and scoring rubric and directions are distributed to the Math 007 instructors.

January 15, 2014 – Meeting held to discuss converting Math 003, Arithmetic, to a non-credit course and modifying the curriculum and units for Math 007, Pre-algebra.

February 4, 2014 – Results of Multiple Choice section of Math 007 common final disseminated to Math 007 instructors for review and future discussion.

The Mathematics Division is also contributing to Institutional Goal #1, “The SLOCCCD will enhance its programs and services to promote students’ successful completion of transfer requirements, degrees, certificates, and courses.”, through its participation in the California Acceleration Project and the development of a new course, Math 128, Applied Algebra.

The Mathematics Division supported Institutional Objective 1.1 “Increase the percentage of transfer-directed students who are transfer prepared by 2% annually”; and Institutional Objective 1.5 “Increase basic skills course success and improvement rates by 2% annually” with its involvement in the California Acceleration Project (CAP) and subsequent development and implementation of an accelerated mathematics course (Math 128, Beginning and Intermediate Applied Algebra) designed to prepare non-STEM/non-Business majors for the following transfer level math courses: Math 236 (Applied Statistics) Math 230 (College Mathematics for the Humanities), and Math 232 (College Algebra).

Summary:

In the spring of 2013, the Mathematics division applied for and was accepted into the CAP “Community of Practice” of the California Community Colleges’ Success Network (3CSN), which is the current professional development grant of the Basic Skills Initiative (BSI) of the Chancellor’s Office of the California Community Colleges (CCCCO).

Three faculty members participated in three CAP conferences in June and September of 2013, and February of 2014 to learn how to develop an accelerated math course using the following proven design principles:

- *Backwards design from College Level Courses*
- *Relevant, thinking oriented curriculum*
- *Just in time remediation*
- *Low stakes collaborative practice*
- *Intentional support for students’ affective needs*

During the summer of 2013, the faculty team developed the course outline for Math 128 and was able to obtain approval from the Curriculum Committee in time to offer two sections in the Spring of 2014. The fall 2013 semester was spent educating the college community about the new course and developing lesson plans that would present the course content using the CAP design principles. An additional section of Math 128 will be taught on the North County Campus in the fall of 2014. The Mathematics division will begin to assess student success in the subsequent transfer level math courses after the fall 2014 semester.

III. Analysis of Measurements/Data: Provide a brief narrative analyzing the institutional, program and site-specific measurements (data and evidence) that are most relevant to your current program status. Program data is available on the [SLOCCCD Institutional Research and Assessment website](#).

The District has asked Divisions to increase the number of sections offered over the last two years to try and boost enrollments. However, enrollments and headcounts have declined. The Mathematics Division continues to have one of the highest efficiency rates in the District. Hopefully the Cuesta Promise and the reaffirmation of accreditation will have a positive effect on enrollments.

The overall success rates have stayed steady, 59.8% since the last APPW, 59.7%. However, the retention rates risen from 81.2% to 83.6%. Although we appreciate institutional data, there is large variability due to who is sitting in any particular classroom.

The success rates for Math 003 have fallen about 7%. This is not surprising since instructors have reported students who are misplaced into this course. Students currently do not need to take the assessment test to enter Math 003. Consequently, there are students who are under-placed and lack motivation to do the course and students who are over placed and cannot handle the material. The Division has recommended that ALL students be required to take the assessment test to enter mathematics courses or satisfy the other placement conditions.

As changes occur through 3SP, we hope to see success rates increase in all courses, especially our basic skills courses.

Math 229 has continued to see better success rates. There has been an upward trend over the last couple of years and this could be due in part to our unit increase from 3 to 4 units.

IV. Program Outcomes Assessment and Improvements:

- Attach an assessment cycle calendar for your program.

Attached

- Attach the most recent program-level Course or Program Assessment Summary (CPAS) or the Student Services Student Learning Outcomes Assessment Report (SSSLOAR)

Attached

- **Summarize in one to two paragraphs program improvements that have been implemented since the last APPW or CPPR.**

There continues to be considerable dialogue surrounding our basic skills students and increasing their success and persistence. A Math 007 common final with scoring rubric was piloted in fall 2013 and the results are being analyzed in spring 2014 for modifications and improvements. There also continued curriculum discussion surrounding Math 007. It is the consensus of the Math 007 instructors that the curriculum needs to be more rigorous to garner student's success rates in the subsequent course.

Curriculum modifications including a possible unit increase will be brought to the division in spring 2014 for discussion and approval.

The Mathematics Division developed (fall 2013) and is piloting (spring 2014) a new accelerated course, Math 128, Beginning and Intermediate Applied Algebra, for students in non-stem/non-business majors who need to remediate their elementary and intermediate algebra skills. This is a six-unit course completed in one semester that replaces the traditional two-semester, ten-unit algebra course sequence. It satisfies the pre-requisites for Math 230, Math 232, and Math 236. We are piloting two sections this spring and will be adding a North County sections in fall 2104.

- **Identify and describe any budget requests that are related to student learning outcomes assessment results or institutional/programmatic objectives.**

Recommended changes and updates to program funding goals are directly connected to classroom instruction which in turn is correlated to all program and course SLOs. Every funding item the Division requests is tied to classroom instruction and student success. This correlates to all Mathematics program and course outcomes.

V. Program Development/Forecasting for the Next Academic Year:

Create a short narrative describing the development forecasting elements, indicating how they support efforts to achieve any of the following, where applicable: Program Outcomes, Institutional Goals, Institutional Objectives, and/or Institutional Learning Outcomes.

- **New or modified action steps for achieving Institutional Goals and Objectives**

Currently the Division continues to address Institutional Objective 1.5 and focusing at the Math 007 level. We will analyze and modify the Math 007 common final as well as discuss and modify the Math 007 curriculum to improve the transition of students from math 007 to Math 123 or Math 128. The discussion has also begun regarding our Math 003 course and the CSS 075 and the possibility of creating a non-credit course for students the need this level of remediation.

- **New or modified action steps for achieving Institutional Learning Outcomes**

Under the Institutional Learning Outcome: Critical Thinking:

“Communicate and interpret complex information in a clear, ethical, and logical manner”

The Division noticed in the fall2013 and spring 2014 SLOs retreats that we need to emphasize more instruction surrounding the vocabulary of mathematics and the careful reading and understanding of mathematical problems and directions. The Division will continue to emphasize these items.

- **New or modified action steps for achieving program outcomes**

The Division will continue to streamline the consistency within courses and increase communications among faculty at the course level, which includes discussions at SLOs retreats and brown bags. The Division will continue to look for innovative ways to serve the developmental mathematics students and their progression through the sequence of courses.

- **Anticipated changes in curriculum and scheduling**

The Mathematics Division is currently reviewing and updating all curricula. We are in the process of having our courses CI-D approved which will involve changes to our curricula. We have developed a calendar for accomplishing a review of our entire curriculum.

As the college continues to define enrollment levels the Division will look closely at the classes offered and base decisions on course offerings/deletions on fill-rate data trends, student needs and the Mathematics program mission and program level outcomes. Another consideration will be to preserve the ability for students take classes from Math 003 through Math 265B on the North county Campus by offering each course in the sequence from Math 003 to math 265B at least once per academic year.

- **Levels or delivery of support services**

The Mathematics Division continues to deliver a high quality program. We offer traditional lecture courses, online courses and Mediated courses to address the varying needs of our students. The Basic Skills Initiative funds currently provide the only tutoring for courses at Math 123 and below. These funds also support the courses above the Math 123 level.

Math tutoring funding needs to be institutionalized at the college. Mathematics students account for the highest usage of tutoring hours.

The Division is in need of facilitators for our below-transfer level courses to assist students with their developmental mathematics needs.

- **Facilities changes**

The Division is in need of a building to house faculty in a central location for collaboration and have classrooms conducive to mathematics instruction. Our course offerings are limited due to lack of space.

The Division needs to update current classrooms to provide classrooms that are more conducive to mathematics instruction and flexibility in scheduling.

- **Staffing projections**

The Mathematics Division is currently down 4 full-time faculty and will have one faculty on reduced retirement load. There is an immediate need to hire full-time faculty. Our course offerings are limited due to lack of faculty. We foresee more retirements in the upcoming future. The Division will continue to hire part-time faculty using the continuous part-time faculty hiring process.

- **Strategies for responding to the predicted budget and FTES target for the next academic year**

The Division will look closely at the classes offered and base decisions on course offerings/deletions on fill-rate data trends, student needs and the Mathematics program mission and program level outcomes. If there is an increase in the FTES, the Division will need to hire more full-time faculty and have adequate space.

UNIT PLAN WORKSHEET -- PRIORITIZED LIST OF IMMEDIATE UNIT NEEDS

Unit: Type Program on Prior Year Worksheet only; other Program header fields will auto-fill on the other worksheets.
 Cluster: Type Cluster on Prior Year Worksheet only; other Cluster header fields will auto-fill on the other worksheets.
 Planning: 2014-2015

1. ****PRIORITIZED TOP TEN LIST OF IMMEDIATE UNITS NEEDS -- ALL CATEGORIES & ALL PROGRAMS -- ONE LIST**
2. Identify and prioritize unit needs based on immediate (upcoming year) requirements of all unit programs.
3. Note if needs are one-time or annual/recurring in the Frequency Column.
4. ****This does NOT include new faculty requests.**
5. Pull in your top 10 priorities from All Worksheets Except Prior Year

	Item	Program	Description	Cost	Frequency	Immediate (IMM)
1	New Math Building	Math	The Mathematics Division needs a building for classrooms and office space.	unknown	One-Time Only	IMM
2	Tutors for Math	Math	Short-term employee Math Tutors for SLO and NCC . \$25,000 (SLO) / \$5,000 (NCC).	\$ 30,000	Annual/Recurring	IMM
3	Facilitators for below-transfer level courses	Math	Short-term employees for below-transfer level course facilitators on the SLO and NC campuses. \$29,000(SLO)/\$16,000 (NCC)	\$ 45,000	Annual/Recurring	IMM
4	1 New Electronic Whiteboard Technology such as a Smart Podium	Math	The division would like consistent technology and classroom configuration in all first call classrooms similar to room 4112. (NCC)	\$ 4,000	One-Time Only	IMM
5	8 Classroom computers	Math	The classroom computers are aging and need to be replaced. (SLO)	\$ 6,400	One-Time Only	IMM
6	3 Classroom computers	Math	The classroom computers are aging and need to be replaced. (NCC)	\$ 2,400	One-Time Only	IMM
7	Reconfigure 2 Math Classrooms	Math	Mount non-glare, larger aspect ratio, whiteboard front and center of room with whiteboards on either side. To accommodate data projector reconfiguring. (SLO)	\$ 2,000	One-Time Only	IMM
8	3 New Electronic Whiteboard Technology such as a Smart Podium	Math	The division would like consistent technology and classroom configuration in all first call classrooms similar to room 4112. (SLO)	\$ 15,000	One-Time Only	IMM
9	2 Data Projectors for classrooms	Math	Short throw projectors are needed for updated classroom configuration. (SLO)	\$ 2,000	One-Time Only	IMM

UNIT PLAN WORKSHEET -- PRIORITIZED LIST OF IMMEDIATE UNIT NEEDS

10	3 Data Projectors for classrooms	Math	Short throw projectors are needed for updated classroom configuration.(NCC)	\$ 3,000	One-Time Only	IMM
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