



COLLEGE of
SAN MATEO

PROGRAM REVIEW AND PLANNING
Approved 9/2/08 Governing Council

The Program Review process should serve as a mechanism for the assessment of performance that recognizes and acknowledges good performance and academic excellence, improves the quality of instruction and services, updates programs and services, and fosters self-renewal and self-study. Further, it should provide for the identification of weak performance and assist programs in achieving needed improvement. Finally, program review should be seen as a component of campus planning that will not only lead to better utilization of existing resources, but also lead to increased quality of instruction and service. A major function of program review should be to monitor and pursue the congruence between the goals and priorities of the college and the actual practices in the program or service.

~Academic Senate for California Community Colleges

Department or Program: Mathematics
Division: Math-Science

I. DESCRIPTION OF PROGRAM (*Data resources: "Number of Sections" data from Core Program and Student Success Indicators; CSM Course Catalog; department records*)

The Mathematics Department offers 21 separate courses and 74 sections for Spring 2009, ranging from Arithmetic to Differential Equations. There are Basic Skills and Remedial courses, Associate Degree Applicable courses, and University Transferable courses.

II. STUDENT LEARNING OUTCOMES (Data resources: SLO records maintained by the department; CSM SLO Coordinator; SLO Website)

- a. Briefly describe the department's assessment of Student Learning Outcomes. Which courses or programs were assessed? How were they assessed? What are the findings of the assessments?

	course	title	SLOs written/updated	1st assessment Cycle plan	number of course level content slos	number of course level SLOs assessed as of Jan 09	number of course level SLOs projected for assessment by June 09	instrument (Note: 2005-2006 assessment cycle was done for the developmental sequence, not for individual courses)	Completion Status Jan 2009	2nd assessment Cycle	Instrument Status Jan 2009
1	802	Prealgebra	2007	2008-2009	7	7	7	common core final	yes		
2	811	arith review	2005/2008	2005-2006	6		6	**exit exam at 120 level/rubric	yes	2008-2009	common core final under development
3	850	supp (basic)	2008	first offered SP 09/ replaces 881	4		4	pre/post tests if not enrolled in math course/ instructor feedback/student surveys/random sample of HBA assign completed			
4	852	supp (trans)	2008	first offered SP 09/replaces 881	4		4				
5	881	exp. Lab	2007	2008-2009	4	4	4		yes		
6	882	exp. Study skills	2007	2008-2009	7	7	7	pre-post test, reflection papers	yes		
7	110	elem alg	2005/2008	2005-2006	13	10	10	exit exam at 120 level/rubric	yes	2008-2009	common core final /data under analysis
8	111	elem alg 1	2005/2008	2005-2006	6	6	6	** In cycle 1 the department assessed math 120 students on developmental sequence SLOs applicable to all developmental classes on a course appropriate level. The findings and actions were applied to all developmental courses.	yes	2008-2009	common core final /data under analysis
9	112	elem alg 2	2005/2008	2005-2006	9	9	9		yes	2008-2009	common core final /data under analysis
10	115	Geometry	2005/2008	2005-2006	8		8		yes	2008-2009	review of final exam underway
11	120	interm alg	2005/2008	2005-2006	6		6		yes	2008-2009	common core final under development
12	122	interm alg 1	2005/2008	2005-2006	6		6		yes	2008-2009	common core final under development
13	123	interm alg 2	2005/2008	2005-2006	6		6		yes	2008-2009	common core final under development

14	125	Finite	2005/2008	2008-2009	4	4	4	common core final/scoring template	yes		
15	130	Trig	2005/2007	f2006-s2007	10	10	10	common core final/scoring template	yes	ongoing	multiple versions of instrument developed
16	145	liberal arts math	2005/2008	2008-2009	11	??	11	random sample of student essays assessed by rubric	partial		
17	147	math/global iss.	2008	not yet taught-expected for Fall 09	6			random sample of student essays assessed by rubric			
18	200	Statistics	2005/2008	2008-2009	6		6	common core under development			
19	222	Precalc	2005/2008	s2008-f2008	6	6	6	common core/rubric	yes		
20	241	app calc 1	2005	2008-2009	7	7	7	common core final/scoring template	yes		
21	242	app calc 2	2005	f2009-s2010	10			common core			
22	251	calc 1	2005/2008	f2007-s2008	7	3	3	common questions on final	yes		
23	252	calc 2	2005/2008	2008-2009	9		5	common core/sample fa 08	partial		
24	253	calc 3	2005/2008	2008-2009	10		10	on-line assignments - data collected fa 08	partial		
25	268	Discrete	2005/2008	2008-2009	3	3	3	final exam and projects	yes		
26	270	linear alg	2005/2008	f2009-s2010	7	7	7	final exams	yes		
27	275	d e	2005/2008	2008-2009	??		??	SLO revision in process /common core-under development			
		Sums			182	83	155				

Findings of Assessment: Cycle 1

Developmental mathematics Sequence (Math 811, 110, 111, 112, 115, 120, 122, 123)

- *Observation:* From an analysis of exit exams for MA 120 we found that students' skill level was appropriate for this level, but that students were poor at laying out their work in a logical organized fashion, and that this was especially noticeable when solving application problems and multi-step exercises.
- *Action: Faculty:*
 - Will continue to emphasize and assess (as they have been doing) the basic mathematical skills and concepts of elementary and intermediate algebra.
 - Will strive to make clear to students exactly what is required for "showing work" in an organized, mathematically acceptable format.
 - Agreed upon a basic list of formulas that students are expected to know, understand, and apply at each developmental algebra level. (811, 110, 120)

Math 125

- *Observation:* Students had difficulty in the area of linear programming, Venn diagrams, and the language of probability.
- *Action:* faculty will adjust time scheduling to spend more time on the identified areas of difficulty.

Math 130

- *Observation:* Our experience assessing Trig revealed considerable diversity in the way in which Trigonometry was taught and the standards to which students were held. Our conclusion was that while some diversity in teaching styles and emphasis is good, the amount of variability was too great to be acceptable.
- *Action*
 - As a Department, we worked out a list of Trig Formulas and concepts that we regarded as necessary for all students to know at the end of the semester.
 - These agreed upon topics have been communicated to instructors teaching trig each semester.
 - A revised common core Final Exam has been developed for use each semester.
 - Faculty are encouraged to employ cumulative testing if they are not so doing.
 - Faculty are to dissuade students from the notion that topics that have been tested can be forgotten.

Math 222

- *Observation:* In the semesters in which this course was examined, instructors were using cumulative testing, and that practice (from the evidence gathered) appears to have been successful. To some extent the assessment has been in flux because the testing entry requirements, designed to insure that students enter with some knowledge of trigonometry, have been in flux.
- *Action: Faculty will:*
 - Require student analysis of errors on tests and additional practice of in "failure" areas.
 - Structure course so higher level reasoning skills may be practiced through the entire semester, perhaps by starting 222 with trig and identities.
 - Continue cumulative testing where it is used, otherwise implement cumulative testing.

- Continue emphasis on graphing and understanding relationships between graph, “signature graphs” and equation and transformed equations.

Math 241

- *Observation:* Work with logarithms arrives late in the semester, and hence there is a big gap between the time that students have been working with logs (perhaps only in Intermediate Algebra) and the time in MA 241 when they are needed. Students find application problems challenging, and will attempt to structure their own trajectory through the course to avoid these.
- *Action:* Instructors teaching the course will take steps to address the observations noted, including:
 - Review the algebra of logs earlier in the semester to help students be more successful when this topic is reached; an HBA assignment can be assigned to be completed in small groups in the MRC with the assistance of tutors if needed.
 - Continue to supply ample practice in challenging areas (multi-step problems, application problems), have students do error analysis, stating in words the error in process so that they recognize patterns of error
 - Structure assignments and quizzes so that “opting-out” of engagement with application questions is not an option. Perhaps, develop HBA assignments for small groups or individuals to work on sets of application problems in the MRC

Calculus Sequence (MA 251, 252, 253)

- *Observation:* Only a preliminary evaluation of typical application problems in MA 251 has been undertaken. The analysis of students’ work on these problems revealed the same lack of logical organized development in the exposition of solutions as was noted in the developmental sequence.
- *Action* As a department, in all courses preparatory to Calculus as well as in the Calculus sequence, consistently insist that students draw and label diagrams when appropriate and consistently (and persistently) insist that students present work in a clearly organized manner which demonstrates the flow of their thought.

Math 268

- *Action: Instructors decided to:*
 - Better communicate the instructor expectation that students will be able to applying tools to new kinds of problems
 - Provide more practice in problem solving for which the solution is non-algebraic.
 - Continue to use or implement oral student presentations. The presentations are time consuming, but very effective.

Math 270

- *Action:* Current faculty will meet to review the strengths and weaknesses of students on the analyzed exams and strategies to help students with conceptual problems and proofs.

- Briefly evaluate the department’s assessment of Student Learning Outcomes. If applicable, based on past SLO assessments, 1) what changes will the department consider or implement in future

assessment cycles; and 2) what, if any, resources will the department or program require to implement these changes? (Please itemize these resources in section VII of this document.)

The mathematics department began the SLO process by writing “sequence SLOs” for its developmental sequence, transfer sequence and calculus sequence. In a sense, these three sets of SLOs may be regarded as “program” SLOs for three programs for which our department has responsibility.

The first attempt at assessment targeted the developmental sequence which terminates in Math 120. Long discussions lead to the development of an instrument (test) which was administered to all Math 120 students, marked and graded against a rubric, after faculty participated in a norming session. The results were informative, although certainly not surprising and were in accord with our intuition regarding student progress. We decided as a department that this process was too cumbersome and time consuming to be sustainable.

We then turned to developing SLOs for individual courses. For assessment, we hit upon the idea of a common core final, developed by a team of instructors currently teaching the course, addressing the SLOs on which they could all agree to an assessment method, with the proposed core discussed by all who wished to participate and revised after discussion. Each instructor administered the core questions as a part of their final exam and submitted an item analysis that was subsequently compiled with other instructors input. Discussion of how to modify presentation, sequencing, etc. followed. This procedure has proven to be sustainable, meaningful, and helps to build consensus and a bit more unity in our teaching efforts. We have set out to complete this process in all courses while retaining the existing common core finals (and creating multiple equivalent versions for future semesters) in the courses already assessed. In the next “round” after a few semesters of data are collected, we will revisit and revise the common core finals, incorporating objectives not yet measured.

In some ways, the “program” SLOS we started with may ultimately be where we want to end up, but the assessment process appears to work better using the course level SLOs.

The resource we need to sustain this effort is more full time faculty to be the leads for each course or group of courses. We are spread too thin.

- c. Below please update the program's SLO Alignment Grid. The column headings identify the GE-SLOs. In the row headings (down the left-most column), input the course numbers (e.g. ENGL 100); add or remove rows as necessary. Then mark the corresponding boxes for each GE-SLO with which each course aligns. The definitions of the GE-SLOs can be found on the CSM SLOAC website: http://www.smccd.net/accounts/csmsloac/sl_sloac.htm (click on the "Institutional" link under the "Student Learning Outcomes" heading.) If this Program Review and Planning report refers to a vocational program or a certificate program that aligns with alternative institutional-level SLOs, please replace the GE-SLOs with the appropriate corresponding SLOs.

GE-SLOs → Program Courses ↓	Effective Communi cation	Quantitative Skills	Critical Thinking	Social Awareness and Diversity	Ethical Responsibility
MATH 881		1-6			
MATH 802		1-7			
MATH 110		1-13	9		
MATH 111		1-6	6		
MATH 112		1-9	8,9		
MATH 115		1-8	2,5,7		
MATH 120		1-6	6		
MATH 122		1-6	6		
MATH 123		1-6	6		
MATH 125		1-6	1,3,4		
MATH 130	10	1-10	5,7,8		
MATH 145	2, 4-11	1-11	1-11		
MATH 147	6	1-6	1-6	5	5
MATH 200	3,5	1-6	3,5	1	1
MATH 222		1-7	1,4,5		
MATH 241		1-7	2,5,6,7		
MATH 242		1-10	???		
MATH 251		1-7	1,2,5		
MATH 252		1-9	2,3,9		
MATH 253		1-10	4,5,9		
MATH 268	2	1(1.1-1.7),2,3	3		
MATH 270		1-7	7		
MATH 275		1-26	2,3,4,5,6,8,9,10,11, 18,19,20,21,22,26		

Based on Jan 2009 version of SLOs

III. DATA EVALUATION *(Data resources: Core Program and Student Success Indicators from the Office of Planning, Research, and Institutional Effectiveness)*

- a. Referring to the Enrollment and WSCH data, evaluate the current data and projections. If applicable, what programmatic, course offering or scheduling changes do trends in these areas suggest? Will any major changes being implemented in the program (e.g. changes in prerequisites, hours by arrangement, lab components) require significant adjustments to the Enrollment and WSCH projections?

Enrollment within the Mathematics department has increased overall during the past three years from 4788 in 2005-2006 to 4971 in 2007-2008, and is projected to be over 5000 during the 2009-2010 academic year. WSCH has increased overall from 23,201 during 2005-2006 to 25,097 during 2007-2008, and is projected to surpass 27,000 during the 2010-2011 academic year. This data suggests that we need another full-time faculty hire in order to meet the increased demand of Math courses.

- b. Referring to the Classroom Teaching FTEF data, evaluate the current data and projections. If applicable, how does the full-time and part-time FTE affect program action steps and outcomes? What programmatic changes do trends in this area suggest?

The total FTEF has steadily increased over the past three years, from 42.13 in 2005-2006 to 43.27 in 2006-2007 to 46.65 in 2007-2008. However, the percent of FTE's taught by full-time people has held steady at about 50%, far below the targeted 75:25 desired ratio. The Math department has been well below the target ratio for many years now and would like to raise the ratio by hiring another full-time instructor.

- c. Referring to the Productivity data, discuss and evaluate the program's productivity relative to its target number. If applicable, what programmatic changes or other measures will the department consider or implement in order to reach its productivity target? If the productivity target needs to be adjusted, please provide a rationale. (Productivity is WSCH divided by FTE. The College's general target productivity will be recommended by the Budget Planning Committee.)

The Productivity (defined as WSCH divided by FTE) appears to have held steady within the Math Department at 30.0 for the past three years. We are waiting for a recommendation from the Budget Planning Committee to see how the Math Productivity compares with the target productivity.

IV. STUDENT SUCCESS EVALUATION AND ANALYSIS *(Data resources: Educational Master Plan; "Success Rates," "Dimension" data from Core Program and Student Success Indicators; previous Program Review and Planning reports; other department records)*

- a. Considering the overall "Success" and "Retention" data from the Dimension section of Core Program and Student Success Indicators, briefly discuss how effectively the program addresses students' needs relative to current, past, and projected program and college student success rates. If applicable, identify unmet student needs related to student success and describe programmatic changes or other measures the department will consider or implement in order to improve student success. *(Note that item IV b, below, specifically addresses equity, diversity, age, and gender.)*

For 2007-2008 the success rate (defined as percent of students with A, B, C, or CR at end of term) was 55%. This is below the college-wide success rate of 70%, and yet it is not surprising given the fact that, for many students, math is one of their most difficult subjects. The Math Department has had a Math Resource Center for several years now where students can get extra tutoring help. We are still short of the number of full-time faculty that we had a few years ago, and by hiring more well-qualified, full-time instructors, we can help improve student success.

- b. Briefly discuss how effectively the program addresses students' needs specifically relative to equity, diversity, age, and gender. If applicable, identify unmet student needs and describe programmatic changes or other measures the department will consider or implement in order to improve student success with specific regard to equity, diversity, age, and gender.

Though all students are treated with equity at CSM, there are unfortunately still some divides when it comes to student success rates in math. The highest success rate by ethnicity was 62% by Asians followed by 60% with Whites; the lowest success rate was among Blacks at 36% followed by Native Americans at 41%. Much needs to be done to increase student success rates among these groups. Females have a slightly higher success rate than males, at 57% success compared to 53% success. Though we certainly want to encourage females to do well in math, we must not leave the males behind either. Finally, there seems to be an increasing success rate as the age group increases; 19 and under students had a success rate of 53%, while 50+ year olds had a 65% success rate. There needs to be an encouragement for incoming college students to do well in math, and some of their strategies to "just get by" in math during high school, may not work when they get the rigorous coursework that college demands.

V. REFLECTIVE ASSESSMENT OF INTERNAL AND EXTERNAL FACTORS AND PROGRAM/STUDENT SUCCESS (*Data Resources: Educational Master Plan; “Dimension: Retention and Success” data from Core Program and Student Success Indicators; previous Program Review and Planning reports; department records*)

- a. Using the matrix provided below and reflecting on the program relative to students’ needs, briefly analyze the program’s strengths and weaknesses and identify opportunities for and possible threats to the program (SWOT). Consider both external and internal factors. For example, if applicable, consider changes in our community and beyond (demographic, educational, social, economic, workforce, and, perhaps, global trends); look at the demand for the program; review program links to other campus and District programs and services; look at similar programs at other area colleges; and investigate auxiliary funding.

	INTERNAL FACTORS	EXTERNAL FACTORS
Strengths	We have a caring Math faculty who are willing and able to help our students.	Math will continue to be a necessary discipline for almost all college students in the years to come.
Weaknesses	We don’t have enough full-timers to share the workload for committee and college work.	We would like our faculty to better reflect our target population. The cost of living in this area limits those willing to become part of our applicant pool.
Opportunities	We have the opportunity to hire faculty who are technologically savvy and able to teach both lower-level basic skills courses and transfer-level courses.	We could reach out to the community more by having dialogue with the high schools and industry, and perhaps have satellite campuses or off-campus courses offered.
Threats	We may not be able to keep up with the demands of college and committee work without more full-time faculty.	We need to be careful not to fall behind in technology as the years go by.

- b. If applicable, discuss how new positions, other resources, and equipment granted in previous years have contributed towards reaching program action steps and towards overall programmatic health (you might also reflect on data from Core Program and Student Success Indicators). If new positions have been requested but not granted, discuss how this has impacted overall programmatic health (you might also reflect on data from Core Program and Student Success Indicators).

In the past three years we have added two new full-time hires, Harry Nishanian and Alyssa Wong. They are wonderful additions to our faculty, but we are still stretched too thin in terms of committee work.

VI. Action Steps and Outcomes (*Data resources: Educational Master Plan, GE- or Certificate SLOs; course SLOs; department records; Core Program and Student Success Indicators; previous Program Review and Planning reports; Division work plan*)

- a. Identify the program’s action steps. Action steps should be broad issues and concerns that incorporate some sort of measurable action and should connect to the Educational Master Plan, the Division work plan, and GE- or certificate SLOs.

- We want to increase the number of full-time faculty.
- We want to increase the number of courses offered online.
- We want to try and evaluate different flexible scheduling options.

b. Briefly explain, specifically, how the program’s action steps relate to the Educational Master Plan.

San Mateo County is projected to have an increase in demand for biological science, physical science, and computer science majors, according to the Educational Master Plan. Math is required in all of these fields, and we can better serve the community with the hiring of more full-time faculty. We would like for our faculty to better reflect the demographics of San Mateo County. Offering more online courses would fit with the Educational Master Plan of having more distance education. As part of the flexible scheduling, we have already begun to offer accelerated coursework (such as Elementary Algebra and Intermediate Algebra in one semester, or Trigonometry and Precalculus in one semester) and also 5-unit courses being taught twice a week for 2.5 hours per session, as opposed to the traditional one hour daily from Monday through Friday. We may be adding more types of flexible scheduling in the future.

c. Identify and explain the program’s outcomes, the measurable “mileposts” which will allow you to determine when the action steps are reached.

Within the next 3 years, we would like to hire at least 2 more full-time faculty, offer 2 more courses online, and add 2 more non-traditional scheduling options for courses.

VII. SUMMARY OF RESOURCES NEEDED TO REACH PROGRAM ACTION STEPS *(Data resources: Educational Master Plan, GE-SLOs, SLOs; department records; Core Program and Student Success Indicators; previous Program Review and Planning reports)*

a. In the matrices below, itemize the resources needed to reach program action steps and describe the expected outcomes for program improvement.* Specifically, describe the potential outcomes of receiving these resources and the programmatic impact if the requested resources cannot be granted.

**Note:* Whenever possible, requests should stem from assessment of SLOs and the resulting program changes or plans. Ideally, SLOs are assessed, the assessments lead to planning, and the resources requested link directly to those plans.

Full-Time Faculty Positions Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
One position to begin in Fall 2009	<p>The new faculty person will</p> <ul style="list-style-type: none"> -Increase by one more the number of people in the department who will work on SLOs and assessment. We offer 21 different courses that must be assessed in a repeating cycle. -Increase the number of fine faculty who teach from a perspective of deep involvement with the department and teach a great variety of the Math courses. This should lead to an improvement in the SLOs assessment process and student success and retention rates. -Increase the number of faculty who 	The new faculty person will be one more person who will work directly with fellow faculty on SLO development and their assessment.

	<p>lend a hand to other department, division, and college work, such as participation in faculty evaluation, revising curriculum outlines (for 21 courses), choosing course textbooks, screening in the hiring process, shared governance, and committee work.</p> <p>If the new person is not granted, then it will be difficult to increase department efforts in pursuit of SLOs development and assessment, department, division, and college work. Also there will be continue to be 25 adjunct Math faculty each semester who cannot participate fully in the department or in assessment for lack of time and lack of compensation to do so.</p>	
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Classified Positions Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
None	N/A	N/A

- b. For instructional resources including equipment and materials, please list the exact items you want to acquire and the total costs, including tax, shipping, and handling. Include items used for instruction (such as computers, furniture for labs and centers) and all materials designed for use by students and instructors as a learning resource (such as lab equipment, books, CDs, technology-based materials, educational software, tests, non-printed materials). Add rows to the tables as necessary. If you have questions as to the specificity required, please consult with your division dean. Please list by priority.

Resources Requested	Expected Outcomes if Granted and Expected Impact if Not Granted	If applicable, <u>briefly</u> indicate how the requested resources will link to achieving department action steps based on SLO assessment.
<p>Item: Apple MacBook, 13-inch 2.1 GHz Intel core 2 Duo, plus AppleCare Protection Plan Number: 24 Vendor: Apple Unit price: \$1488.00 Total Cost: \$35,712.00 Status*: Replacement</p>	<p>The present computers in 16-111 (old 16-165) have begun to show their age and are beginning to be troublesome. The ITS people have advised us that they need to be replaced. We have specified 24 computers because we need 19 in 16-165 and have space in the Mac Mathcart for five more Mac laptops.</p>	<p>The computers are a key component to students' activities in some math classes, especially statistics; if the computers are not functioning properly then it will be difficult or impossible to assess students' learning.</p>
<p>Item: Fathom Dynamic Data 10-User Lab, Package ISBN: 978-1-</p>	<p>Ordering Fathom (a software program used in Statistics classes)</p>	<p>If students don't have access to the necessary software programs to do</p>

<p>55953-689-9 Bundle: Softcover/CD Number: 1 Vendor: Fathom Unit price: \$500.06 Total Cost: \$500.06 Status*: New</p> <p>Item: NTSF for MacIntosh Number: 1 Vendor: Apple Unit price: \$32.42 Total Cost: \$32.42 Status*: New</p>	<p>will enable us to put Fathom on more computers in the Math Resource Center and on the Mac Cart. Without this package, students will have a harder time working on Fathom because of its limited availability on the computers we presently have.</p> <p>This software makes it easier for the Statistics instructors to work with both students who have PCs and those who have Macs. Without the software the instructors will have the usual PC/Mac hassles that may arise.</p>	<p>their homework and classwork then it will be difficult to assess students' learning.</p> <p>As there are differences between PCs and Macs, it may be difficult to determine a "level playing field" for all students in assessing their learning outcomes without having this software.</p>
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* Status = New, Upgrade, Replacement, Maintenance or Repair.

VIII. **Course Outlines** (Data Resources: department records; Committee On Instruction website; Office of the Vice President of Instruction; Division Dean)

- a. By course number (e.g. CHEM 210), please list all department or program courses included in the most recent college catalog, the date of the current Course Outline for each course, and the due date of each course's next update.

Course Number	Last Updated	Six-year Update Due
Math 811	2006	2012
Math 802	2007	2013
Math 880/881	2007	2013
Math 110	2008	2014
Math 111	2008	2014
Math 112	2008	2014
Math 115	2004	2010
Math 120	2004	2010
Math 122	2008	2014
Math 123	2008	2014
Math 125	2005	2011
Math 130	2005	2011
Math 145	2004	2010
Math 147	2008	2014
Math 200	2005	2011
Math 222	2005	2011
Math 231	2005	Banked 2008
Math 241	2005	2011
Math 242	2005	2011
Math 251	2005	2011
Math 252	2005	2011
Math 253	2005	2011
Math 268	2007	2013

Math 270	2007	2013
Math 275	2007	2013

IX. Advisory and Consultation Team (ACT)

- a. Please list non-program faculty who have participated on the program's Advisory and Consultation Team. Their charge is to review the Program Review and Planning report before its submission and to provide a brief written report with comments, commendations, and suggestions to the Program Review team. Provided that they come from outside the program's department, ACT members may be solicited from faculty at CSM, our two sister colleges, other community colleges, colleges or universities, and professionals in relevant fields. The ACT report should be attached to this document upon submission.

Rick Hough, Professor of Mathematics, Skyline College

Overall structure and content of program review is clear and informative. The SLOAC process has been embedded into the standard procedures for faculty, and the results from the assessments in many classes have already led to plans for change. As the cycle continues, the effects of the changes can be analyzed with the gathering of new data. The majority of the assessment is of the same type; that is, direct assessment of student work scored by using a rubric. If different types of assessment are included in the next cycle, possibly even richer results might be obtained. Also, the degree to which the process and rubrics are made transparent to the students themselves is unclear. The message that new full-time faculty are required to continue and expand the SLOAC efforts at a high level is heard loud and clear.

- b. Briefly describe the program's response to and intended incorporation of the ACT report recommendations.

We will continue to use SLOs to measure and assess how our students are doing in our courses. SLOs are included on every course syllabus. It is currently not mandatory that instructors inform students how the SLOs are evaluated, but many instructors share this information with students. Our primary means of assessment is with the use of common core final examinations. Data obtained from our assessment of SLOs will affect how we teach our courses in the future.

Upon its completion, please email this Program Review and Planning report to the Vice President of Instruction, the appropriate division dean, and the CSM Academic Senate President.

Please list the department's Program Review and Planning report team:

Primary program contact person: Melvin Hom
 Phone and email address: (650)574-6622; homm@smccd.edu

Full-time faculty: Melvin Hom, Cheryl Gregory, Robert Hasson, Ken Brown

Part-time faculty:

Administrators:

Classified staff:

Students:

Faculty's signatures

Date

Dean's signature

Date