

*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

## INSTRUCTIONS

For information about cycles for *Comprehensive Program Review and Planning*, see Instructional and Student Services program review rotation schedules posted online in their respective sections of the program review webpage: [http://collegeofsanmateo.edu/prie/program\\_review/program\\_review.php](http://collegeofsanmateo.edu/prie/program_review/program_review.php)

### **Resources for Supporting Documentation:**

A listing of resources and documents which provide data or information for each section is included at the end of this document, after the final signature page. These resources are posted online and their URLs are listed at the end of this document.

(You may delete this section, when you submit your final program review.)

### **Next Steps:**

*Program Review and Planning* reports are due March 25, 2010. This date is aligned with CSM's *Integrated Planning Calendar*.

(See: [http://collegeofsanmateo.edu/prie/institutional\\_documents.php](http://collegeofsanmateo.edu/prie/institutional_documents.php))

Upon its completion, please email this *Program Review and Planning* report to the Vice President of Instruction, the Vice President of Student Services, the appropriate division dean, the CSM Academic Senate President, and the Dean of Planning, Research, and Institutional Effectiveness (PRIE).

Diana Bennett, Academic Senate President, [bennettd@smccd.edu](mailto:bennettd@smccd.edu)

Susan Estes, Vice President of Instruction, [estes@smccd.edu](mailto:estes@smccd.edu)

Jennifer Hughes, Vice President of Student Services, [hughesj@smccd.edu](mailto:hughesj@smccd.edu)

John Sewart, Dean (PRIE), [sewart@smccd.edu](mailto:sewart@smccd.edu)

DEPARTMENT OR PROGRAM: Mathematics

DIVISION: Math-Science

1. **DESCRIPTION OF PROGRAM** : The Mathematics Program is comprised of three types of courses: A. Non-transferable courses, including basic skills: Math 811, 802, 850, 110, 111, 112, 115, 120, 122, 123; B. Transferable courses for Liberal Arts and Business majors: Math 125, 145, 147, 200, 241, 242; C. Transferable courses for Science, Engineering, and Math Majors: Math 130, 222, 251, 252, 253, 268, 270, 275. Currently Math 110, 120, and 200 are offered in hybrid format. Summer 2012, Math 120 and Math 200 on-line sections will be added to the schedule. For Fall 2012 an online Math 125 will be added to the schedule, and in Spring 2013 hybrid Math 111, 112, 122 and 123 will be added to the schedule.

II. STUDENT LEARNING OUTCOMES (SLOs)

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

Most courses are assessed by use of a common core of questions included in instructors' final exams. The core questions are developed by a committee of instructors and revised at the start of each assessment cycle. Multiple equivalent forms of each question are developed. The exceptions to this are Math 145 and 147 in which the instructors assess from multiple essays and quiz results. Additional exceptions are Math 253, 268, 270, 275; these courses usually have only one or two sections per semester and the faculty assess based on instruments develop for that assessment cycle.

CSM Math SLO Calendar		type data collection: 1 or 2 semesters	next data collection cycle calendar year starting fall ____	latest - next data collection cycle calendar year	Status of Current Cycle
course	Title		fall of		
1	110	elem alg	1	yearly	collected data Fall 2011, data in process
2	111	elem alg 1	1	yearly	collected data Fall 2011, data in process
3	112	elem alg 2	1	yearly	collected data Fall 2011, data in process
4	115	geometry	1	2008	2014 1/2011 current cycle complete
5	120	interm alg	1	yearly	collected data Fall 2011, data in process
6	122	interm alg 1	1	yearly	collected data Fall 2011, data in process
7	123	interm alg 2	1	yearly	collected data Fall 2011, data in

						process
8	125	finite	1	2012	2018	2/8/2011 needs follow up all objectives
9	130	trig	1	2011	2017	2/8/2012 follow up needed slo 5
10	145	liberal arts math	2	2012	2018	1/2011 current cycle complete
11	147	math/global iss.	2	2015	2021	6/2011 current cycle complete
12	200	statistics	1	2014	2020	1/2011 current cycle complete
13	222	precalc	1	2016	2022	2/8/2012 data collected, no follow up needed, current cycle completed
14	241	app calc 1	1	2016	2022	6/2011 current cycle complete
15	242	app calc 2	2	2014	2020	1/2011 current cycle complete
16	251	calc 1	1	2016	2022	1/2011 current cycle complete
17	252	calc 2	1	2015	2021	6/2011 current cycle complete
18	253	calc 3	2	2015	2021	1/2011 current cycle complete
19	268	discrete	2	2014	2020	1/2011 current cycle complete
20	270	linear alg	2	2013	2019	1/2011 current cycle complete
21	275	d e	2	2012	2018	1/2011 current cycle complete
22	802	prealgebra	2	2016	2019	1/2011 current cycle complete
23	811	arith review	1	2013	2016	1/2011 current cycle complete
24	850	supp (basic)	2	2012		course will reactivate in Fall 2012
25	852	supp (trans)	2	inactive		

The Math Resource Center supports student success in mathematics courses. In addition to SLO assessment for courses, the department also assesses its efforts in the Math Resource Center. The most recent student feedback survey, Fall 2011, showed 90%+ of the participants rated the quality of the lab good (or better than good), thought that the MRC staff is helpful, that the procedures for using the lab are easy to follow, and claimed that the lab was available when needed but only 78% said that they were able to get help when they asked for it.

- b. Briefly evaluate the department's assessment of SLOs. 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 assessment plan is systematic but very time consuming. After multiple cycles of assessment, discussion of best practices, design and re-design of common core exams, appointment and re-appointment of department leads for information dissemination and data collection, and annual assessment in all sections of the developmental algebra sequence, the department has not succeeded in meeting self-established goals for success in the developmental algebra sequence. As a result of multiple years of discouraging assessment results, the faculty again discussed the problems in depth during monthly math meetings and in email discussion in 2010-11 and committed to a three year emphasis on improved mastery of identified sub-objectives. This new cycle started in Fall 2011 with math 110/111. The results from Fall 111 were not encouraging and are currently under discussion. One observation is that we need more of the faculty teaching these courses to be actively involved participants in the pedagogical

and curricular discussions that take place at department meetings and we need to find a more effective and efficient way to communicate ideas and decisions with faculty who are unable to attend departmental meetings. Summary emails, no matter how well crafted, cannot replace active participation in discussions and do not produce needed buy-in and commitment to consistency in core content and standards across the many sections of these courses. The department desperately needs at last two more full time mathematics faculty members to teach courses at this level as part of their load and act as leads/coordinators for these courses.

To better prepare students for success in the developmental algebra sequence, the department is investigating the feasibility of a 5 unit arithmetic (replacement of Math 811) with inclusion of signed numbers and other selected topics relevant to preparation for Math 110.

Meeting set goals in Math 125 has been problematic for multiple years. The course outline was revised Fall 2011, effective Fall 2012. One full time faculty member consistently teaches this course in the summer and has committed to develop scope and sequence timetables, develop sample assignments and evaluations in line with the new outline. He will also use the existing common core and share the deliverables and outcomes with the instructors during the 2012-13 year. All instructors will be invited to enter into discussions about curriculum and pedagogy. The results will be assessed again during the 2012-13 year.

Due to the heavy work load of on-going assessment in problematic courses, the transfer level courses that rarely need follow up evaluations have been placed on a 6 year cycle. Non-transfer courses, not under annual review are on a three year cycle, with the exception of Math 115 which is only offered in Summer Sessions and is on a 6 year cycle.

To better provide students with support leading to success in mathematics courses, the department needs to continue to staff the MRC with faculty at least the current level, to increase the number of student tutors in the MRC. During Fall 2011 the MRC served an average of 287 students per day, an increase of 73 students per day over Spring 2011, and accumulated approximately 25,246 student contact hours, an increase of 8731 hours over Spring 2011. Data during the first three weeks of Spring 2012 indicate a continued growth trend with an average of 397 visits a day for that three-week period.

The department needs to continue to provide load reduction to the faculty member who coordinates these SLO efforts.

- c. Below please update the program's SLO Alignment Grid below. The column headings identify the General Education (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.

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	<input type="checkbox"/>	Effective Communication	Quantitative Skills	Critical Thinking	Social Awareness	Ethical Responsibility
--------------------	--------------------------	----------------------------	------------------------	----------------------	---------------------	---------------------------

Courses <input type="checkbox"/>				and Diversity	
MATH 811		1-6			
MATH 802		1-7			
MATH 850		1-3			
MATH 110		1-6	5		
MATH 111		1-6	6		
MATH 112		1-6	5		
MATH 115		1-8	2,5,7		
MATH 120		1-6	6		
MATH 122		1-6	6		
MATH 123		1-6	6		
MATH 125		1-4	1,3,4		
MATH 130	6	1-6	2,3,4,5		
MATH 145	1,2	1,2	1,2		
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		1-6	2,5,6		
MATH 242		1-8			
MATH 251		1-7	1,2,5		
MATH 252		1-6	1,2		
MATH 253		1-8	3,4,8		
MATH 268	2	1(1.1-1.7),2,3	3		
MATH 270		1-7	7		
MATH 275		1-6	1-5		
Based on Fall 2011 version of SLOs					

### III. DATA EVALUATION

- 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 shows a steady increase from 5063 in 2008-2009 to 5328 to 2009-2010 to 5519 in 2010-2011, with projected enrollments of 5759 in 2011-2012, 5987 in 2012-2013, and 6215 in 2013-2014. WSCH's also show a steady increase from 26,475 in 2008-2009 to 28,424 in 2009-2010 to 29,106 in 2010-2011, with projected WSCH's of 30,632 in 2011-2012, 31,947 in 2012-2013, and 33,262 in 2013-2014. We need to keep up with the increase in enrollments and WSCH's by hiring more full-time math faculty.

- 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?

Both the full-time and adjunct FTEF have held steady over the past 3 years, with full-time FTEF being 23.58 in 2008-2009, 23.48 in 2009-2010, and 23.12 in 2010-2011 (actually a small decline). Adjunct FTEF have been 24.02 in 2008-2009, 23.54 in 2009-2010, and 25.06 in 2010-

2011. Since adjunct faculty cannot regularly participate in department and division meetings and other non-teaching tasks, it is imperative that we hire more full-time math faculty.

- c. Referring to the Productivity [LOAD] 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.

There is an increasing trend of LOAD from 545 in 2008-2009 to 595 in 2009-2010 to 593 in 2010-2011. The projections are for 626 in 2011-2012, 651 in 2012-2013, and 675 in 2013-2014. Since LOAD is the ratio of WSCH/FTEF, an increasing LOAD means WSCH is increasing, FTEF is decreasing, or both. Again this points to the need for our hiring more full-time math faculty.

#### **IV. STUDENT SUCCESS EVALUATION AND ANALYSIS**

- a. Considering the overall "Success" and "Retention" data, 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.*)

The success rate for Math students at CSM is 57%, which is below the college success rate, but the Math Department feels that standards cannot be changed just for the sake of increasing the success rate. Students are always encouraged to meet with instructors during office hours and to take advantage of the Math Resource Center, where they can get extra help with their math questions. At the developmental level, the department is piloting a Supplemental Instruction program.

- 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.

There continues to be the disparity where Asian and White students succeed at a far higher rate (68% and 61%, respectively) than Blacks, Hispanics, and Native Americans (41%, 52%, and 40%, respectively). The department is interested in a MESA program, but our demographics do not meet the required percentages. The department will observe as Puente is reinstated on this campus to see if opportunities for collaboration arise, perhaps as simple as asking the counselor to steering Puente students towards sections with Supplementary Instruction. One faculty member is considering offering a section of Math 110 in Spanish

#### **V. REFLECTIVE ASSESSMENT OF INTERNAL AND EXTERNAL FACTORS AND PROGRAM/STUDENT**

- 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; program review links to other campus and District programs and services; look at similar programs at other area colleges; and investigate auxiliary funding.

	<b>INTERNAL FACTORS</b>	<b>EXTERNAL FACTORS</b>
<b>Strengths</b>	We have a caring Math faculty who are willing and able to help our students. We have a pool of competent math students who are willing to become mathematics tutors in the Math Resource Center. The current tutors provide an invaluable service that not only assists other students in succeeding in mathematics, but also further hones their own skills both in mathematics and as tutors.	Math will continue to be a necessary discipline for almost all college students in the years to come.
<b>Weaknesses</b>	<p>We don't have enough full-timers to share the workload for committee and college work.</p> <p>We don't have enough full-time faculty to spearhead efforts to improve success in the developmental math sequence.</p> <p>We don't have enough full-time faculty to develop and assess ventures into the on-line/hybrid world of mathematics courses.</p> <p>Though we gained one full-time faculty member during the 2011-2012 school year, we also lost one due to retirement, for a net gain of zero, and there are a few other full-timers who may retire in the near future.</p>	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.
<b>Opportunities</b>	<p>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.</p> <p>We have faculty with technical skills or developing technical skills to offer viable online hybrid courses. We</p>	<p>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.</p> <p>Student work demands have changed their school demands. Working adults are seeking more</p>

	<p>have the opportunity to hire faculty with experience in this developing market.</p> <p>We have the opportunity to increase the number of peer tutors and better serve students in the Math Resource Center.</p>	<p>distance education courses. Technology to support viable on-line or hybrid courses is developing rapidly.</p>
<p><b>Threats</b></p>	<p>We may not be able to keep up with the demands of college and committee work without more full-time faculty. We cannot rely on adjunct faculty to perform extra committee work since they are not obligated to do so, and they often have to teach at several schools in order to make ends meet.</p> <p>With our limited full time resources, we will be forced to make hard choices in staffing as more on-line/hybrid courses are developed.</p> <p>Student participation in the Math Resource Center has grown dramatically. To maintain the current level of service we need to increase the number of student tutors working in the Math Resource Center to meet the demand. Without an increase in our annual budget, we will not be able to meet this demand.</p>	<p>We need to be careful not to fall behind in technology and technology based courses as the years go by.</p>

- 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. If new positions have been requested but not granted, discuss how this has impacted overall programmatic health. (You might reflect on data from Core Program and Student Success Indicators for this section.)

Last year, we added Lena Feinman as one new full-time hire. She is a wonderful addition to our faculty and is integral the staffing, coordination of tutors, and assessment for the Math Resource Center. In addition she teaches developmental and transfer level courses, has developed and is teaching hybrid Math 200, and is the department SI coordinator. However, we are still stretched too thin in terms of committee work, SLO work, COI work, and development and assessment of courses for the on-line/hybrid market. Our request for additional faculty in 2012 was denied. Our needs have increased rather than decreased.

In 2010, the Math Department acquired 19 Dell thin client desktop computers to replace the aged computers in 16-111. This update allows for the lab to be supported by a remote server and eliminated IT issues that had negatively impacted computer based Statistics classes. The classroom is generally dedicated to Statistics classes and is used as a MRC satellite eleven hours a week.



In 2011, the Math Department purchased 10 Dell thin clients computers and paid for a cabling upgrade in the MRC (18-202). In 2012, Math acquired 6 more Dell thin client desktops, 4 of which have been installed in the MRC (18-202) and 2 of which are planned for 16-111 when additional drops can be installed. The demand for these computers is high. Students use them to access online homework systems and do other work related to their courses. We still need four more Dell thin clients to bring the MRC up to the 20 that our wiring can handle.

## VI. Goals, Action Steps, and Outcomes

- a. Identify the program's goals. Goals should be broad issues and concerns that incorporate some sort of measurable action and should connect to CSM's *Institutional Priorities 2008-2011, Educational Master Plan, 2008*, the Division work plan, and GE- or certificate SLOs.

Increase the number of full-time faculty. Increase the number of courses offered in online or hybrid format. Evaluate different flexible scheduling options. Improve student success in the developmental algebra sequence.

Increase the number of student tutors employed in the Math Resource Center.

- b. Identify the action steps your program will undertake to meet the goals you have identified.  
Increase the number of full-time faculty – request for two additional full time faculty hires in 2013.  
Increase the number of courses offered in online or hybrid format – already planned for Fall 2013. Further additions will await assessment of the pilot courses.  
Evaluate different flexible scheduling options – Evaluate student success in various formats of hybrid/on-line and report to math faculty. Use data to inform pedagogical changes and scheduling changes. Continue communication with other CCs with successful online programs, specifically looking at their demographics compared to CSM demographics.  
Improve student success in the developmental algebra sequence – Hire two new full-time faculty members, identify leads to coordinate efforts in developmental math and improve communication among faculty who cannot actively participate in discussions.  
Increase the number of student tutors employed in the Math Resource Center – Present budget increase request, backed by data, to appropriate administrators and committees.
- c. Briefly explain, specifically, how the program's goals and their actions steps relate to the *Educational Master Plan*.  
According 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. Math is required in all of these fields, and we can better serve the community with the hiring of more full-time faculty. Offering more online courses would fit with the Educational Master Plan of having more distance education and will provide more flexible scheduling for working students. Increasing the number of full-time faculty actively participating in efforts to improve student success in the developmental algebra sequence will lead to increased student persistence toward goal completion, to completion of certificates and AA degrees, and to transfer. Increasing the number of student tutors in the Math Resource Center will better serve the needs of students

who come to the Math Resource Center for tutorial assistance in an effort to improve their success in mathematics.

- d. Identify and explain the program’s outcomes, the measurable “mileposts” which will allow you to determine when the goals are reached.
- Increase the number of full-time faculty – Goal reached when faculty are hired.
- Increase the number of courses offered in online or hybrid format – Goal reached when courses are scheduled and consistently have sufficient enrollment to “make.”
- Evaluate different flexible scheduling options –Goal met when key faculty report to departmental meeting and informed decisions about future scheduling are made.
- Improve student success in the developmental algebra sequence – Number of SLO for developmental algebra courses for which satisfactory ratings are earned increases by 10%, then continues to improve until satisfactory is achieved for all SLOs.
- Increase the number of student tutors employed in the Math Resource Center – Increase positive responses to relevant questions on the MRC student feedback survey by 5%.

## VII. SUMMARY OF RESOURCES NEEDED TO REACH PROGRAM ACTION STEPS

- 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.
Two full time mathematics faculty	<p>The new faculty persons will</p> <ul style="list-style-type: none"> <li>-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 SLO assessment process and student success and retention rates.</li> <li>-Increase the number of faculty who lend a hand to other department, division, and college work, such as participation in faculty evaluation, revising curriculum</li> </ul>	The new faculty persons will work directly with fellow faculty on SLO development and their assessment and will directly support department efforts in developmental algebra courses.

	<p>outlines, choosing course textbooks, screening in the hiring process, shared governance, committee work, and development of online/hybrid courses. If the new person is not granted, then it will be difficult to increase department efforts in pursuit of the above listed tasks. 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. In addition, work on assessment adds to the load of the already overburdened full-time faculty.</p>	
--	--	--

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.
Math Resource Center Coordinator	<p>The Math Resource Center (MRC) coordinator whom we had in the recent past was able to streamline all the workings of the MRC, including tutoring, scheduling, checking out of math books within the lab, checking to make sure students log in and log out of the lab, handling print and copy jobs and their payments, answering the phone in the lab, helping proctor makeup exams of instructors, making sure the MRC is properly stocked with necessary equipment, giving instructors midterm and final reports on lab attendance, and making sure the computers in the lab are properly running. If the position is not granted then it means all of the duties listed above will continue to be done juggled by student aides, instructors and tutors.</p>	<p>The coordinator would support the SLO process by mastering SARS track reporting systems, assisting in MRC data collection, and providing support to faculty assessing students in the Math 850.</p> <p>The coordinator would schedule and facilitate workshops that target specific student needs, for example calculator workshops, statistics in excel workshops, etc.</p>

Other 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.
Student tutors	To meet the increased demand in the Math Resource Center we received a one-time assistance with student tutor funds that increased our semester allotment by approximately \$3000. To maintain the level of service of Spring 2012, we need to increase the annual Student Tutor Budget to \$11,000 per semester (\$22,000 per year).	Student tutors would be able to take away some of the burden of faculty in the Math Resource Center in terms of tutoring and helping out students with their homework, TBA assignments, and quiz and exam preparation. Presently most of Math SLOs are based on student performance on final exams.

- 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><b>Item:</b> TI 83+ graphing calculators  <b>Number:</b> 4  <b>Vendor:</b> Office Depot  <b>Unit price:</b> \$99.99+tax  <b>Total Cost:</b> \$399.96+tax  <b>Status*:</b> Replacement</p> <p><b>Item:</b> Thin clients: HP 8200E Smart Buy with Citrix  <b>Number:</b> 10  <b>Vendor:</b> HP  <b>Unit price:</b> \$1190.00+tax  <b>Total Cost:</b> \$11,900.00+tax  <b>Status*:</b> New</p>	<p>These are replacements of calculators which no longer work.</p> <p>The OptiPlex system is the direction CSM is going for all labs; it can be linked to a server and all updating and software repairs are done remotely. We started the phase-in of this system in 2011 with the installation of data jacks and acquisition of 16 computers (10</p>	<p>Students use graphing calculators in the MRC and upon request receive tutorial assistance in how to correctly use the calculator.</p> <p>These computers support student access to materials needed for success in SLOs in all mathematics courses, and access to remedial materials in support of MRC SLOs.</p>

<p><b>Item:</b> External USB, DVD drive <b>Number:</b> 2 <b>Vendor:</b> Office Depot <b>Unit price:</b> \$49.99+tax <b>Total Cost:</b> \$99.98+tax <b>Status*:</b> New</p>	<p>of which we purchased). This request is for the second phase of 10 computers. Further data drop upgrades are already planned by IT.</p> <p>The newer computers in the MRC do not contain internal DVD drives. The MRC has some DVD resources available to students. Acquisition of drives will allow these resources to be more effectively viewed on the larger screens of the desktop machines.</p>	<p>The DVDs support student learning and success.</p>
<p><b>Item:</b> Desktops: HP Touchsmart 9300 Elite <b>Number:</b> 38 <b>Vendor:</b> HP <b>Unit price:</b> \$1118.13 <b>Total Cost:</b> \$42,488.94+tax (NOTE: This cost is for computers only, Refurbishing costs may be \$100,000-\$200,000) <b>Status*:</b> New</p>	<p>Computers are useful in helping to increase arithmetic and algebraic skills for students in Math 811, 110, 111, and 112 (i.e. Basic Skills courses). Computers are also helping in honing skills for Math 120 (Intermediate Algebra) students. There is a need for a second computer lab to aid in teaching Basic Skills Mathematics, as the present lab in 16-111 is fully employed for teaching statistics, and is probably not large enough for the estimated demand.</p> <p>Optimal location for this additional classroom will be adjacent to the Math Resource Center with a connecting door and large windows in the wall so that the room may double as an extension to the MRC when classes are not in session. Cost of such modifications are unknown.</p>	<p>SLO assessment can be greatly aided by having students do problems on a computer, since the computer can quickly assign randomly-generated homework assignments, quizzes, and exams, and grade them quickly and accurately, so that instructors can focus their energy on teaching, rather than making, correcting, and recording homework, assignments, quizzes, and exams.</p>
<p><b>Item:</b> Plantronics Calisto Bluetooth Headset with USB adaptor <b>Number:</b> 2 <b>Vendor:</b> Amazon or Nuance <b>Unit price:</b> \$100-\$150+tx <b>Total Cost:</b> \$200-\$300+tx <b>Status*:</b> New</p>	<p>Some faculty computers, specifically tablet computers, do not have internet microphones needed to conduct Elluminate Live sessions or Skype sessions with students.</p>	<p>In addition to allowing faculty to conduct Elluminate Live Sessions as office hours for distance education classes, the microphones used with Elluminate Live which is embedded in WebAccess allows faculty to record live</p>

		lectures or record supplementary lectures to be posted on WebAccess. Such recordings allow students repeated access to lecture materials.
--	--	---

\*Status = New, Upgrade, Replacement, Maintenance or Repair.

### VIII. Course Outlines

- 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 Update Date	Six-year Update Due Date
802	2006	2012
811	2006	2012
850	2012	2018
110	2008	2014
111	2008	2014
112	2008	2014
115	2010	2016
120	2011	2017
122	2008	2014
123	2008	2014
125	2011	2017
130	2007	2013
145	2011	2017
147	2008	2014
200	2011	2017
222	2011	2017
241	2011	2017
242	2011	2017
251	2011	2017
252	2011	2017
253	2011	2017
268	2007	2013
270	2007	2013
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.

List ACT names here.

Attach or paste ACT report here.

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

## X. PROGRAM REVIEW PARTICIPANTS AND SIGNATURES

Date of Program Review evaluation:

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

Primary program contact person: Mel Hom

Phone and email address: 650-574-6622, homm@smccd.edu

Full-time faculty: Ken Brown, Cheryl Gregory, Mel Hom

Part-time faculty:

Administrators

Classified staff:

Students:

_____ <i>Primary Program Contact Person's Signature</i>	_____ <i>Date</i>
_____ <i>Full-time Faculty's Signature</i>	_____ <i>Date</i>
_____ <i>Part-time Faculty's Signature</i>	_____ <i>Date</i>
_____ <i>Administrator's Signature</i>	_____ <i>Date</i>
_____ <i>Classified Staff Person's Signature</i>	_____ <i>Date</i>
_____ <i>Student's Signature</i>	_____ <i>Date</i>
_____ <i>Dean's Signature</i>	_____ <i>Date</i>



**Comprehensive Program Review  
RESOURCES FOR SUPPORTING DOCUMENTATION**

**Section 1**

This section contains a listing of sources for data and key documents referred to in Section 2 along with other resources. Contact information for relevant people is also included.

**Academic Senate**

<http://www.collegeofsanmateo.edu/academicsenate/>

Contact: [csmacademicsenate@smccd.edu](mailto:csmacademicsenate@smccd.edu)

Diana Bennett, President, [bennettd@smccd.edu](mailto:bennettd@smccd.edu), (650) 358-6769

**College Catalogs and College Class Schedules are archived online:**

<http://collegeofsanmateo.edu/schedule/archive.asp>

**Course Outlines are found at:**

<http://collegeofsanmateo.edu/articulation/outlines.asp>

**Committee on Instruction**

<http://www.smccd.net/accounts/csmcoi>

Contact: Laura Demsetz, Chair, [demsetz@smccd.edu](mailto:demsetz@smccd.edu), (650) 574-6617.

**Program Review Resources** (includes forms, data, and completed program reviews for both instructional and student services program review)

*Core Program and Student Success Indicators* (see links for "Quantitative Data for Instructional Programs")

*Distance Education Program Review Data*

*Glossary of Terms for Program Review*

*Listing of Programs Receiving Program Review Data from PRIE*

*Rotation Schedule for Instructional Program Review, 2008-2014*

[http://collegeofsanmateo.edu/prie/program\\_review/program\\_review.php](http://collegeofsanmateo.edu/prie/program_review/program_review.php)

**Office of Planning, Research, and Institutional Effectiveness (PRIE)**

<http://collegeofsanmateo.edu/prie/>

Contact: John Sewart, Dean, [sewart@smccd.edu](mailto:sewart@smccd.edu), (650) 574-6196

Contact: Milla McConnell-Tuite, Coordinator, [mcconnell@smccd.edu](mailto:mcconnell@smccd.edu), (650)574-6699

**At PRIE Website:**

*College Index, 2009-2010*, [http://collegeofsanmateo.edu/prie/institutional\\_documents.php](http://collegeofsanmateo.edu/prie/institutional_documents.php)

*Comprehensive Listing of Indicators and Measures, 2009-*

*2010* [http://collegeofsanmateo.edu/prie/institutional\\_documents.php](http://collegeofsanmateo.edu/prie/institutional_documents.php)

*Division/Department Workplans, Spring 2009 (only)*

[http://collegeofsanmateo.edu/prie/institutional\\_documents.php](http://collegeofsanmateo.edu/prie/institutional_documents.php)

*Educational Master Plan, 2008*, <http://collegeofsanmateo.edu/prie/emp.php>

*Institutional Priorities, 2008-2011*

[http://collegeofsanmateo.edu/prie/institutional\\_documents.php](http://collegeofsanmateo.edu/prie/institutional_documents.php)

**Student Learning Outcomes (SLOs) website:**

<http://www.collegeofsanmateo.edu/sloac/>

Contact: David Locke, SLO Coordinator, [locke@smccd.edu](mailto:locke@smccd.edu), (650)574-6624

## **Section 2**

This section contains the references that serve as data sources for the individual sections of the Comprehensive Program Review Form. Explanatory notes are included.

### **DEPARTMENT OR PROGRAM:**

To identify programs on the comprehensive program review cycle, see *Rotation Schedule for Instructional Program Review, 2008-2014* at PRIE website at page for Instructional Program Review.

Also see *Listing of Programs Receiving Program Review Data from PRIE*.

### **I. DESCRIPTION OF PROGRAM**

- "Number of Sections" data from *Core Program and Student Success Indicators* (published by PRIE for each program)
- CSM Course Catalog
- Department records

### **II. STUDENT LEARNING OUTCOMES**

- SLO records maintained by the department
- CSM SLO Coordinator
- SLO Website
- The definitions for the General Education (GE) SLOs can be found on the CSM SLOAC website.

### **III. DATA EVALUATION**

- Enrollment, WSCH, FTEF, and productivity data for each program can be found in *Core Program and Student Success Indicators*. (Published by PRIE.)
- Productivity is also commonly known as "LOAD." See *Glossary of Terms for Program Review* for definitions of key terms.
- Faculty Load: the ratio of the weekly contact hours (WSCH) of enrolled students and a faculty's hours of instruction per week. In other words, WSCH divided by FTE. ?
- The College's general target productivity will be recommended by the Budget Planning Committee.

### **IV. STUDENT SUCCESS EVALUATION AND ANALYSIS**

- *Educational Master Plan, 2008*
- *College Index, 2009-2010*
- *Institutional Priorities, 2008-2011*
- *Student Success (course completion and retention) data from the "Core Program and Student Success Indicators";*
- *Other reports published by PRIE regarding student success*
- *Previous Program Review and Planning reports*
- *other department records*

### **V. REFLECTIVE ASSESSMENT OF INTERNAL AND EXTERNAL FACTORS AND PROGRAM/STUDENT SUCCESS**

- *Educational Master Plan, 2008*
- *Institutional Priorities, 2008-2011*

- College Index, 2009-2010
- Student Success (course completion and retention) data from the "Core Program and Student Success Indicators";
- Other reports published by PRIE regarding student success
- Previous Program Review and Planning reports
- Other department records

a. About SWOT Analysis:

SWOT Analysis is a strategic planning tool used to evaluate the **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats involved in a project or initiative. It involves specifying the objective of the venture or project and identifying the internal and external factors that are favorable and unfavorable to achieving that objective. SWOT analysis considers both internal and external conditions.

Strengths: attributes of the organization that are helpful to achieving the objective.

Weaknesses: attributes of the organization or that are harmful to achieving the objective.

Opportunities: external conditions that are helpful to achieving the objective.

Threats: external conditions that are harmful to achieving the objective

b. Reflect on data from "Core Program and Student Success Indicators"

**VI. Action Steps and Outcomes**

- Educational Master Plan, 2008
- Institutional Priorities, 2008-2011
- GE- or Certificate SLOs
- College Index, 2009-2010
- Course SLOs
- Department records
- Core Program and Student Success Indicators
- Previous Program Review and Planning reports
- Division work plan

**VII. SUMMARY OF RESOURCES NEEDED TO REACH PROGRAM ACTION STEPS**

- Educational Master Plan, 2008
- Institutional Priorities, 2008-2011
- College Index, 2009-2010
- GE- or Certificate SLOs
- Course SLOs
- Department records
- Core Program and Student Success Indicators
- previous Program Review and Planning reports

**VIII. Course Outlines**

- Department records
- College Catalog
- Committee On Instruction
- Course Outlines (online)
- Office of the Vice President of Instruction
- Division Dean