Program Mission Statement

The Developmental Mathematics Program at Honolulu Community College provides a positive student-centered learning environment in which students can achieve proficiency in logical thinking, problem solving and other mathematical skills needed to be successful in achieving their academic goals.

Program Learning Outcomes

1. Students will be able to demonstrate mathematical concepts and principles by performing computations

2. Students will be able to apply appropriate technology to enhance their mathematical thinking and understanding

3. Students will be able to apply critical thinking and use mathematical reasoning to solve problems and judge the reasonableness of their results.

Program Description

As an open-door institution, Honolulu Community College understands the need to address varying degrees of preparation in the students who choose to enroll, including those who are not fully prepared for college-level instruction. To meet the needs of these unprepared or underprepared students, the College instituted a policy in 2011 requiring mandatory placement testing for incoming students, with subsequent first semester enrollment in remedial/developmental English and/or Math courses as needed. From 1981 to 2010, the College Skills Center (CSC) had been responsible for offering remedial/developmental instruction in both English and Math, as well as providing tutoring services in both areas. With the adoption of the new campus policy, it was felt that a re-designed math curriculum would be required to best achieve new objectives. The re-designed math curriculum was first offered in Fall 2010. Remedial courses previously aligned with the CSC were integrated into their respective academic divisions. Also, drop-in tutoring has now been offered by the math department for the past two years.

The remedial/developmental curriculum in Math includes MATH 9, MATH 24, and MATH 25. Since the new College policy was developed and implemented, much of the focus has been on MATH 9.
Math 9 is a 5-credit course that utilizes instructor lecture, computer-based math software for supplemental instruction, a text book written by math faculty and tutors in the classrooms. Students who complete Math 9 in a reasonable amount of time have the option to take Math 24 or to mentor their peers. Mentors are paid through a stipend. Math 50 will also be an option shortly.

Part II. Analysis of the program

With reference to Demand, the Health Call of Unhealthy, is based on a failure to meet the target increase for percent of those placing in remedial/developmental to actually enroll in such courses. The percentage of students enrolling fluctuates quite a bit, with an increase of 7% in program year 10-11, a decrease of 1% in program year 11-12 and no increase in program year 12-13. Data for how many students took the compass placement and placed in a remedial/developmental course would be significant in analyzing the demand. A decrease could mean fewer students placed in remedial/developmental courses, which is a healthy sign that students are coming to HCC better prepared.

With reference to Efficiency, for which the Health Call is Healthy, the fill rates have consistently been above 80%, and the program has typically had to provide additional sections to meet demand. Another significant trend in this area is the substantial increase in classes taught by regular discipline faculty from program year 09-10 to program year 11-12, but with a slight decrease in program year 12-13. The increase is due to the College’s reorganization, which shifted instructional faculty from the College Skills Center to the Math Department for better integration of instruction at all levels. The decrease is a reflection of more remedial/developmental courses being taught by lecturers.

With reference to Effectiveness, for which the Health Call is Cautionary, the retention rates for 1 and 2 levels below College level, which correspond to math 25 and Math 24, are quite good (range is between 86% and 94%) and have held steady across the period under analysis. The retention rate for those 3 or more levels below (Math 9) dropped from 75% to 58%, then increased by 1%, but the rate for successful completion did increase by 5% in program year 12-13. The Math 9 attendance policy may have been a factor in the decrease and fluctuation of the retention rate.

All initiatives planned in 2012 were implemented, and changes and improvements to the curriculum and program policies are ongoing. New initiatives have been proposed, implemented, evaluated and revisited.

1. Study Skills: a component focused on Study Skills has been incorporated into remedial/developmental Math instruction, and student response has been positive, but the program has not yet determined if it plays a significant role in student success. A retention specialist from the student success center attends
classes weekly to cover learning styles, time management, note-taking and other skills.

2. Textbook: A year ago the math faculty rewrote their previous home-grown text book. The new book is easier to comprehend with examples geared toward Honolulu Community College’s student population. The textbook will continue to be annually revised based on feedback from instructors, tutors and students.

3. Computerized homework: The ALEKS program is utilized by Math 9 students. Based on student surveys, it is difficult to determine if ALEKS helped them in learning math concepts, but according to exam results, it appears to be helping many students. The My Math Lab program is utilized by many students in the upper division math courses.

4. Tutor Center: A drop-in Math tutoring service has been offered for the past two and a half years. Since the tutoring is located on the same floor as most Math classes, more students are coming in to take advantage of the service. Since many students use a math software program to enhance their learning, it would be beneficial to provide computers in the tutor room for students with no access to a computer from home. With more students seeking tutoring services, a larger space is needed.

The 2013 Action Plan will include, on a continuing basis, the Study Skills, computer-based instruction, homework, and tutoring as discussed above. Embedded questions for all Math 24 courses are currently being implemented as an assessment tool to determine whether or not students are attaining the student learning outcomes successfully. This data will assist the math faculty in determining the next step to increase success. Embedded questions for Math 25 will be implemented shortly.

In addition, the following support is needed for program success:

1. Developmental Math Coordinator: The numerous new and ongoing initiatives require a coordinator to oversee implementation and management. A coordinator is also needed to maintain a cohesive program by ensuring that instructors execute the policies set for Math 9, needed materials are revise/updated annually, and student complaints and problems are dealt with. Continued release time funding is needed (5 credits per semester). Support from both the math faculty and administration is vital to the success of this program.

2. IT Specialist: Since the infrastructure of the remedial math program consists of 80 computers, a designated IT specialist would be needed to update and trouble-shoot this equipment. The program currently has problems keeping them updated in a timely manner, and weekly crashes have occurred. As a result, the program has had to rely on staff and faculty to volunteer their expertise in
maintaining the computers. A specific person is needed when computers are not working during a class period.

The resources needed to maintain the program of remedial/developmental instruction in math include the following: 1) direct instructional costs (lecturers hired in addition to fulltime faculty): 2) Developmental math coordinator assigned time 3) math discipline supplies; 4) Math tutor expenses; 5) stipends for mentors; 6) ALEKS instructional units (Web-based artificially intelligent assessment and learning system).