

Kapi'olani Community College Developmental Education Project Proposal

1. Proposed Project:

Elementary Algebra I and Elementary Algebra II (Math 24 and 25) will be redesigned to incorporate new teaching strategies, technology and peer mentoring. The goal of the course redesign is two fold: 1) to encourage students to take an active role in their own learning, build on timely assessment and feedback, tap into preferred learning styles, and utilize faculty guidance and 2) to move from a seat-time model to one based on subject matter mastery.

As part of the course redesign, faculty will revamp the elementary algebra I and II courses around a web-based software package (MyMathLab) that generates individualized assessments, study plans, and active learning problems. Course content will be broken into smaller chunks (modules). As students work through the modules, they are provided customized instruction based on their strengths and weaknesses so that they build momentum, confidence, and ultimately, subject mastery.

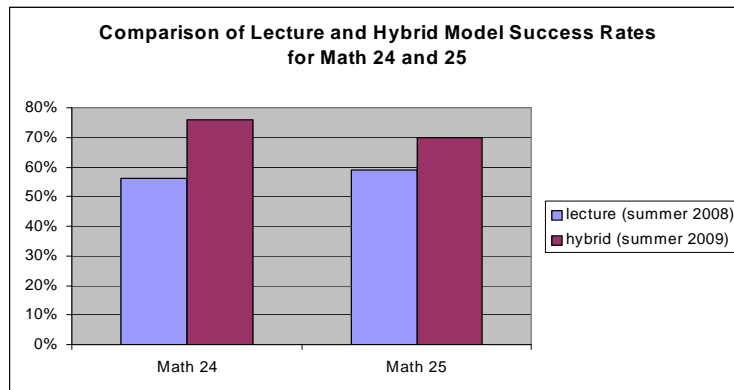
Students will attend one class meeting per week. These class meetings will be used to provide intensely focused instruction on known trouble spots, and teacher-student conferences to review a student's progress toward end learning goals for the course. Students will also be required to attend two lab sessions: 1 session with a math instructor who can assist students as needed and a second lab session monitored by a peer mentor. MyMathLab is online so students can also access it outside of the math lab through any computer with internet. All testing will be done in the campus testing center.

2. New or Ongoing Project:

The College piloted a similar project in summer 2009. Math 24 and 25 instructors developed a hybrid model which combined a 50 minute lecture followed by a 1-hour lab. The instructors used MyMathLab as the course management system. Two sections of math 24 and math 25 were offered. In both courses, students did better in the hybrid course than the traditional model. Table 1 shows the success rates¹.

In math 24, 76% of students successfully passed the hybrid course compared to 68% in the traditional model. In math 25, 70% of students in the hybrid model successfully passed compared to 59% in the traditional model. In addition to improved success rates, the students reported liking the immediate feedback that MyMathLab gave on their homework problems, and the teachers reported that the students' questions were more specific and they could more accurately assess the problems the students were having through the item analysis offered in MyMathLab.

Table 1



¹ Success is defined as a C or higher in Math 24 and 25.

3. Refer to any research that influences or serves as a foundation for the project:

The math 24 and 25 course redesign model is based on the Emporium Model which is being used successfully by several colleges including Cleveland State Community College. Kapi'olani CC math faculty attended the Access to Success Mathematics Course Redesign Project on October 15-16, 2009 to learn about course redesign and specifically about the Emporium Model which divides course content into modules, relies heavily on interactive software, and provides structured flexibility so students can master the material in each module. More Kapi'olani CC faculty will attend a workshop on the Cleveland State Community College's course redesign project at MCC on December 5, 2009. In addition to Access to Success and Cleveland State Community College, we are using research from The National Center for Academic Transformation which provides expertise on improving learning and reducing cost in higher education by advancing the use of information technology.

4. List partners in the CC system or explain how the design lends itself to export:

The course redesign project lends itself to export because it utilizes information technology that captures best practices in the form of interactive Web-based materials and sophisticated instructional and course management software. Students have access to a personalized interactive learning environment while faculty can add to, replace, correct, and improve the learning materials. The technology can be used to restructure any course whether it is fully face to face or fully online. Additionally, the course redesign project embodies characteristics including active learning, computer based learning resources, mastery learning, on demand help, and alternative staffing (Twigg, 2005). These characteristics can inform other course redesign projects in a way that reflects the discipline, student audience, and the preferences of faculty.

5. Refer to the Campus and the System strategic plan section that demonstrates the relevance of this project:

This project addresses the UHCC and Kapi'olani CC strategic planning outcome B: Hawaii's Educational Capital – which is intended to increase the educational capital of the state by increasing the participation and degree completion of students, particularly low-income students and those from underserved regions (UHCC Strategic Outcomes and Performance Measures, 2008-2015 and Kapi'olani Community College Strategic Plan, 2008-2015).

The proposed project specifically addresses performance measure B3: Increase the number and percent of all students, who if assigned to a developmental intervention, successfully complete that sequence and move on to degree applicable instruction to 80 percent. All student success in developmental writing to increase from 74 to 83 percent; in developmental reading from 63 to 80 percent; in developmental math from 62 to 80 percent (Kapi'olani Community College Strategic Plan 2008-2015).

6. Discuss how this project promises to sustain itself after funding pulls back:

In the proposed project information technology will be used to reduce costs and increase academic productivity. The College is shifting faculty time-on task to the technology which will lessen the labor-intensive quality of instruction. The locus of activity will shift from the faculty to the student: the focus is on student problem solving and projects rather than on presentation of materials. Consequently, the proposed project reduces faculty-student contact hours while increasing student time on task. This will result in reduced costs in one of two ways: 1) if enrollment in math 24 and 25 remains the same, we anticipate instructional resources (course expenditures) to be reduced or 2) if the College's enrollment continues to increase, there will be little or no change in expenditures. Course expenditures are already integrated into the College's base funding.

The proposed course redesign project is requesting funding to establish the math lab which will be able to hold 40 students. Once established, maintenance of the lab will be incorporated into the College's technology plan so that the College does not have to continue to seek external funds. The cost of MyMathLab is part of the students' book fees.

7. Indicate the way in which the success or failure of the project will be visible through measurable and reportable outcomes:

By 2015, the College will increase student success in developmental math from 62% to 80% (Kapi'olani CC Strategic Plan, 2008-2015: Performance measure B3). The course redesign project will play a significant role in the increase. Additionally, the College will evaluate the impact of the course redesign by measuring outcomes including retention, persistence and success rates of the proposed project with the outcomes of the traditional course model. We will also report a cost comparison of the two models.

8. How does this project address reduction in delivery costs and time to readiness for students:

Similar course redesign projects sponsored by The National Center for Academic Transformation have reduced costs by 37% on average, with a range of 15% to 77% (Twigg, 2005). By utilizing technology, the College will be able to accommodate greater numbers of students with the same resources (course expenditures). Additionally, course management systems such as MyMathLab can enhance pedagogy through structured flexibility which gives students more time to master the material and faculty more time to help students with what they do not understand. With this model, students can potentially master the math 24 and 25 student learning outcomes in one semester. Additionally, the College plans to implement a course redesign in PCM 23 (basic math) and Math 103 so the sequence of remedial – developmental – college math will all be offered using the emporium model. With the course redesign, students beginning in remedial or developmental math can advance to college math in less time than the traditional model allows, and more importantly, they will have the flexibility to spend more time on topics that they are weak in and less time on topics in which they have sufficient skill level.

9. Budget:

Item	Estimated Cost	Total
Computers for student lab (40 @ \$1,000.00)	\$40,000.00	
Furniture (20 @ \$715.00 + 40% shipping and handling)	\$20,020.00	
		\$60,020.00

10. Approved by Louise Pagotto, Interim VCAA

References:

Twigg, C. (June 2005). Course redesign improves learning and reduces cost. *Policy Alert*. San Jose, CA: The National Center for Public Policy and Higher Education. Retrieved on October 26, 2009 from www.higereducation.org