Math 2008-09 Initiative: Redesign of Developmental Math Course Sequences

Summary:

Improve student learning and retention, and facilitate effective transitions to and among the many programs that Mathematics serves at Lane CC, through a complete review, assessment, and reorganization of the developmental mathematics course sequences. (The courses in the sequences are MTH 10, 20, 52, 60, 65, 70 and 95).

Description:

- The Mathematics Division is primarily a service division. It serves to equip students with the technical and problem-solving skills required by many programs, from professional technical programs such as nursing and welding to university transfer programs such as business, physics and engineering.
- We strive each year, individually and as a division, to find and implement practices that improve student learning. In particular, we:

* work to incorporate national mathematics education standards (NCTM and AMATYC).
* experiment with alternate delivery methods including open-entry/exit, variable credit, self-paced courses offered through the Math Resource Center (MRC); Computer-Based Instruction (CBI); telecourses; and Flexible Sequence Algebra.
* have begun a project to reexamine the developmental mathematics sequences, as a whole, with regard to content and delivery.

- We are now at a stage where we need to integrate these efforts in a systematic way to redesign our developmental mathematics program. The need for integration of this work into a comprehensive curriculum redesign is taking on a special urgency at this time for three reasons. First, we are facing an increase in the number of vocational/technical students in our developmental math courses, and we need to make our classes more responsive to the needs of these populations. Second, the Nursing Program recently changed its math requirement from 52 to 95. This will require adjustments to the curriculum in Math 60, 65, and 95 to include content and notation that nursing students require. Third, advances in interactive mathematics software packages may offer us the opportunity to realize efficiencies while improving student retention and success.
- Whatever success we achieve in improving the learning and retention of our students will be leveraged by the programs we serve. Increasing the success rate and preparedness of our developmental math students will in turn increase the retention and performance of the students in their professional and academic programs.

• Specifically, we will utilize the lessons and experiences gained from our Flexible Sequence Algebra grant and the Math Resource Center to build more flexibility into the scheduling and delivery of our courses through modularization, flexible scheduling, trailer sections, and the use of technology, thus improving student retention and efficiency of instruction. We will utilize the special expertise of a number of our part-time faculty to ensure that our curriculum is inclusive of students having diverse learning styles. Finally, we will use the results of a division-wide survey conducted by our Developmental Math Task Force (begun in 2005) to identify areas of consensus for implementation of changes to our curriculum and pedagogy.

Strategic Direction

- Achieve and sustain fiscal stability.
- Build organizational capacity and systems to support student success and effective operations.
- Create a diverse and inclusive learning college: develop institutional capacity to respond effectively and respectfully to students, staff, and community members of all cultures, languages, classes, races, genders, ethnic backgrounds, religions, sexual orientations, and abilities.
- Create, enhance, and maintain inviting and welcoming facilities that are safe, accessible, functional, well-equipped, aesthetically appealing and environmentally sound.
- Foster the personal, professional, and intellectual growth of learners by providing exemplary and innovative teaching and learning experiences and student support services.
- Position Lane as a vital community partner by empowering a learning workforce in a changing economy.

Learning Plan Goals

- Curriculum enhancement.
- Enhance student success and retention
- Increase support for innovation in instruction.

Student Affairs Plan Goals

- Create a Welcoming, Inclusive, and Responsive Environment.
- Develop policies and practices to increase student persistence.
- Facilitate effective transitions through college policies, practices, and programs that are intentional and aligned with the college's vision mission, and values.

College Council Priorities

Questions and Answers

How is the initiative linked to the Unit Plans most recently submitted?

- 1. How does it continue the achievement of those goals?
- 2. If this is a continuation of an initiative started last year, make sure that relationship is clear.

How is this initiative linked to the efficiencies and productivities plans you had last year?

- 1. How does it continue the achievement of these plans?
- 2. If this is a continuation of an efficiency or productivity plan started last year, make sure that relationship is clear.

This initiative is a continuation of proposals we have made in past years to restructure our developmental math course sequences. The next two to three years will be implementation years for this project.

Describe the resources needed:

100 hours of curriculum development funding for faculty to implement curriculum changes.

100*28.21*1.345 = \$3,794

What specific measurable program outcomes do you expect to achieve with this initiative? The outcomes should be specific enough to be measurable. Also, outline the method that will be used to determine the results.

• improvement in student retention and success rates in developmental math courses

Department Priority:

2

Unit Resources:

Question Not Answered

Carl Perkins Funding Request

Curriculum Development Funding Request

- 1. List the following information
 - Course Numbers (titles if not currently offered)
 - Instructor Name(s) who will work on the curriculum development
 - Whether each of the courses is in, or has been through, the curriculum approval process
 - MTH 20, 52, 60, 65, 70, 95 (all are current Lane math courses)
 - Cassidy, Kovcholovsky, Selph, Kirkpatrick, Smith, Moore, Murphy, Thompson, Steele, Hill

2. List each course number (or title) and the materials to be created for each class

- Instructional goals, objectives, syllabi and outlines
- Lab instruction packets
- Practice, quiz, presentation &/or demonstration materials
- Other (specify)
- MTH 60, 65, 95 integrating mathematics appropriate for nursing students
- MTH 52 revising 18-year old curriculum (packet) to meet the needs of students currently required to take it, including MOA students, who will be required to take the course beginning fall 2008. Also, identifying appropriate online materials for the course, which is now being offered online.
- MTH 20, 60, 65, 70, 95 restructuring these courses in response to survey results (possibly significantly changing the content and the delivery of these courses)

3. List each course number (or title) and give your timeline for beginning and completing each course curriculum development.

- MTH 60, 65, 95 integrating mathematics appropriate for nursing students completed by June 2009
- MTH 52 revising 18-year old curriculum (packet) to meet the needs of students currently required to take it, including MOA students, who will be required to take the course beginning fall 2008. Also, identifying appropriate online materials for the course, which is now being offered online. completed by fall 2008

• MTH 20, 60, 65, 70, 95 - restructuring these courses in response to survey results (possibly significantly changing the content and the delivery of these courses) - ongoing, possibly two to three year implementation

4. What are up to 3 departmental instructional goals that are met through the development of curriculum in each class?

- increasing student retention and success
- using technology to realize efficiencies in our delivery of these courses
- meeting the needs of programs mathematics courses support

5. List each course number (or title) and give the value of the development of curriculum in each course to other faculty members.

Question Not Answered

6. List each course number (or title) and say how many students will be served by the development of curriculum in each class.

MTH 20, 60,65,70, 95 - several thousand students each year

MTH 52 - approximately 150 students per year

7. List each course number (or title) and give the specific benefits to students that you expect from the development of curriculum in each class.

- increased student retention and success
- curriculum that is relevant to students in their programs

8. List each course number (or title) and give the specific benefits for diversity that you expect from the development of curriculum in each class.

• increased student retention and success for all students

9. List each course number (or title) and give the specific benefits to sustainability that you expect from the development of curriculum in each class.

Question Not Answered

10. List each course number (or title) and give the specific effects on distributed learning that you expect from the development of curriculum in each class.

Revision of MTH 52 as a distributed learning course will enable access to students at remote sites and provide students access to a prerequisite course for a number of programs that otherwise would not have it because the course is only offered a few times per year in the traditional format.

Hours requested for Curriculum Development funding:

Please enter the amount of one of the following:

- 100 hours maximum for new development.
- 70 hours maximum for course revision
- 50 hours for 3-4 credit conversion
- other (use if multiple courses addressed in one initiative

Do not enter any characters other than numbers and a decimal.

How many hours are you requesting? If there are multiple courses addressed in the initiative, please list each course number (or title) and give the number of hours requested for each course.

100

Can this initiative be partially funded?

Yes

Partially funded curriculum development HOURS requested:

70

Explanation of effect of partial funding:

We will not fund the MTH 52 course for curriculum development, this go around, if only partial funding is available.

Technology Fee Funding Request