

Products Used **MyMathLab, MyMathLabPlus**
 Course Name **College Algebra**
 Credit Hours **Three**



KEY TAKE-AWAY

Redesigning UCF's already successful MyMathLab adoption to include MyMathLabPlus, required lab time, and homework mastery resulted in increased mean final exam scores, increased success rates, and an increase in the quality and productivity of the course.

Textbook in Use

College Algebra, 3rd Custom Edition, Lial, Hornsby, and Schneider

Course Implementation

Course Design

The University of Central Florida (UCF) adopted MyMathLab in 2005 for its College Algebra course. At that time, all sections of the course used the program for common homework and quiz assignments. In spring 2008, as part of a grant from the National Center for Academic Transformation (NCAT), the school redesigned the course as a modified emporium model using MyMathLabPlus.

Students attend one lecture a week and spend at least three hours in a computer lab working on MyMathLabPlus. The lab is open 60 to 70 hours a week and is staffed by instructors, graduate teaching assistants, undergraduate teaching assistants, and peer tutors.

Assessments

7 percent Weekly homework
Completed on MyMathLab, must earn at least 70 percent to take associated quiz

8 percent Weekly quizzes
Completed on MyMathLab, may be attempted up to seven times

10 percent Participation

45 percent Tests (three per semester)
Completed on MyMathLabPlus in a dedicated testing lab

30 percent Final exam
Completed on MyMathPlus in a dedicated testing lab

Use of MyMathLab and MyMathLabPlus

Students turn to MyMathLab and MyMathLabPlus for homework, quizzes, practice tests, and custom exercises. They also use the eText, Study Plan, discussion board, and multimedia content. Coordination of the course is facilitated by MyMathLabPlus's Coordinator Course feature.

Use of MyMathLab and MyMathLabPlus contributes 90 percent to a student's final course grade.

Results and Data

According to Tammy Muhs, mathematics coordinator, MyMathLab and MyMathLabPlus contribute to the increased quality of the course and to improved learning outcomes. "Prior to redesign, students were passively listening instead of being actively engaged and the course suffered from course drift due to a lack of coordinated content among instructors."

Results of the redesign include:

- **Improved test averages.** Summer 2009 redesigned course mean final exam scores were 9.2 percent higher than that semester's traditional course mean final exam scores. Fall 2009 redesigned course final exam scores were 2.8 percent higher than that semester's traditional course final exam scores. See Table 1.
- **Improved pass rates.** Summer 2009 redesigned course pass rates were 21 percent higher than that semester's traditional course pass rates. Fall 2009 redesigned course pass rates were 8.3 percent higher than that semester's traditional course pass rates. See Table 2.

The MyMathLab and MyMathLabPlus programs are effective tools for increasing active learning. Requiring that students be active learners—that they spend more time doing math instead of watching math—has contributed to increased course quality and improved learning outcomes.

—Tammy Muhs
Mathematics Coordinator, General Education Program

Course	Traditional Summer 2009	Redesigned Summer 2009	Traditional Fall 2009	Redesigned Fall 2009
Mean Score	71.0%	77.5%	78.2%	80.4%
Standard Deviation	15.9%	13.9%	16.3%	14.0%

Table 1. Final Exam Scores, Summer 2009 and Fall 2009 ($n=2,143$)

Grade Distribution	Traditional Summer 2009	Redesigned Summer 2009	Traditional Fall 2009	Redesigned Fall 2009
A	12%	20%	29%	28%
B	26%	36%	27%	34%
A and B	38%	57%	56%	61%
A, B, and C	62%	75%	72%	78%

Table 2. Grade Distribution and Pass Rates, Summer–Fall 2009 ($n=2,143$)

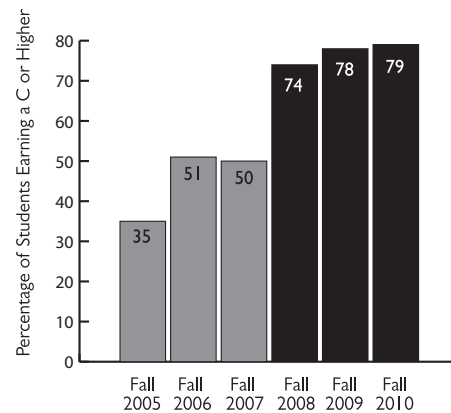


Figure 1. Comparison of Fall Pass Rates before and after MyMathLabPlus/NCAT Redesign, 2005–2010

The Student Experience

- The course redesign enables members of a diverse student population to choose 1) when they access course materials, and 2) which instructional resources to use based on their schedules and academic needs.
- Built-in progress monitoring and access to instructors enables students and instructors to stay informed and accountable.
- Student-to-student collaboration via the course discussion board complements in-class group activities and, combined with a classroom response system, encourages active participation.
- According to a fall 2010 student survey, 61 percent of students replied that the redesigned course offered “considerably more instructional interaction” compared to other courses.

Conclusions

“College Algebra was restructured to provide our largest course enrollment with a small-within-large environment,” says Muhs. “Students receive the benefits of an interactive and individualized online learning program plus one-on-one instruction from faculty that is focused, trained, and committed to providing consistent, coordinated instruction.”

Institutional benefits include the ability to serve more students, a reduction in repeated course attempts, coordination of sections, and the prevention of course drift.

Based on the success of the College Algebra redesign, UCF has redesigned Intermediate Algebra, Precalculus, and Trigonometry using the modified emporium model.

Submitted by Tammy Muhs
Mathematics Coordinator, General Education Program