HYBRID INTERMEDIATE ALGEBRA AND HYBRID COLLEGE ALGEBRA: A SUCCESSFUL PILOT

Sonia Ford
Midland College
Department of Mathematics and Sciences
3600 N. Garfield Street
Midland, Texas 79705
sford@midland.edu

The goal of the presentation and paper is to present a successful pilot of courses offered during the Spring 2006 semester and again offered during the Fall 2006 semester in the Midland College Mathematics Department.

To begin, let me give a brief history of placement and course offerings from the Midland College Mathematics Department. At Midland College, students are enrolled into mathematics courses based upon their scores on THEA (Texas Higher Education Assessment), the SAT/ACT, or COMPASS placement test scores. A majority of students who need a mathematics course will meet with a counselor and will be advised to take the COMPASS placement test before they register, especially if there has been at least one semester since exams or previous math courses were taken. After the placement test is taken by a student, he or she will meet again with a counselor and are advised as to which mathematics course to enroll based upon set placement scores. At Midland College we offer Basic Mathematics (Math 0389), Introductory Algebra (Math 0390), and Intermediate Algebra (Math 0391) in our developmental sequence. After successful completion of Intermediate Algebra with a grade of "C" or better, students may register for College Algebra (Math 1314), and after successful completion of Intermediate Algebra with a grade of "B" or better, students may register for Statistics (Math 1342) or Math for Business and Social Sciences I (Math 1324).

Our department has found that many students who are placed in Developmental Mathematics based solely on placement exam scores only require a refresher course before moving on to transfer level courses. In addition, it is discouraging to students who are placed into developmental mathematics to realize that they have one or two semesters of coursework to complete before they begin taking classes for transfer credit. To address these issues, I developed an accelerated hybrid format for Intermediate Algebra and College Algebra. In this hybrid, accelerated course format, students are able to complete both Intermediate Algebra and College Algebra within a 16-week time frame. During the first 8-weeks of the semester students complete Intermediate Algebra and then complete College Algebra during the last 8-weeks of the semester. It is important to note that each course is taught separately.

Students qualify to register for Hybrid Intermediate Algebra and Hybrid College Algebra by instructor recommendation from their previous course or high placement scores into Intermediate Algebra. Students who are recommended by their previous course instructors have excelled in the previous course with a grade of A and have shown a dedication to learning the material. Placement scores based on THEA and Compass are given in Figure 1.

Placement Scores Based on THEA and Compass	
Traditional Courses	Hybrid Courses
Intermediate Algebra 230 or greater on THEA between 48 and 70 on the Algebra domain on Compass College Algebra 270 or greater on THEA 49 or less in the College Algebra domain on Compass	Intermediate Algebra 260 or greater on THEA 64 or greater on the Algebra domain on Compass College Algebra Grade of A in Intermediate Algebra 36 or greater in the College Algebra domain on Compass

Figure 1: Placement Scores Based on THEA and Compass

Those students who qualify, register for the Hybrid Intermediate Algebra course, Hybrid College Algebra course, and a one-credit Math Lab at the beginning of the semester. At the present, students who do not pass Hybrid Intermediate Algebra during the first 8-weeks are withdrawn and must wait until the next semester to complete College Algebra.

The format for both courses are hybrid, therefore students are responsible for both attending class and completing assignments given online outside of class. Students attend class for three hours each week. Currently, we meet on Tuesdays and Thursdays from 11:00 am - 12:20 pm. During class, abbreviated lectures are given over material assigned for homework, questions are answered, and technology concerns are addressed. Students use the textbook supported homework and testing program called MyMathLab©, published by Pearson Education Incorporated, to complete homework assignments online. In addition, the online classroom management system Blackboard® is used to post instructor developed notes and reviews for exams and additional projects. Each week students are required to take an exam over the material covered in the Midland College Math Lab. All exams are in a proctored, paper and pencil format. In the future, exams will be given proctored online using the MyMathLab© program. Currently our facilities at the Midland College Math Lab cannot accommodate proctored online testing.

In Figure 2 below is a description of the grading scale for both Hybrid Intermediate Algebra and Hybrid College Algebra.

Grading Scale	
20% Homework	Homework is completed on MyMathLab© with due dates for assignments on Tuesdays and Thursdays by midnight. Students may turn in assignments after the due date with a 25% penalty on their assignment grade. Additional projects (both individual and collaborative) for enrichment are assigned throughout the course of the 8-weeks.
60% Chapter Exams	Exams are given weekly in a proctored, paper and pencil format in the Midland College Math Lab. Students are given a three-day window to complete exams. Late exams may be taken by permission only with a 10-point deduction on the exam grade.
20% Final Exam	A comprehensive final exam is given on the last day of the 8-week course.

Figure 2: Grading Scale for Hybrid Intermediate Algebra and Hybrid College Algebra

At Midland College, enrollment in Developmental Mathematics is approximately 1000 students. Approximately 300 students are enrolled in Basic Mathematics, approximately 370 students are enrolled in Introductory Algebra, approximately 355 students are enrolled in Intermediate Algebra, and approximately 270 are enrolled in College Algebra. Spring 2006 was the first semester that accelerated hybrid courses were offered. Nineteen students enrolled in Hybrid Intermediate Algebra and eighteen students enrolled in Hybrid College Algebra. All students were enrolled based on prior instructor recommendations. In Fall 2006 enrollment declined to twelve students in Hybrid Intermediate Algebra and fourteen students in Hybrid College Algebra. All students were enrolled based on placement scores from summer 2006. I believe that the summer break and lack of advertising for the courses contributed to a decline in enrollment. At the time of this presentation and paper, twenty-six students are enrolled in Hybrid Intermediate Algebra and Hybrid College Algebra. All of these students were registered based on prior instructor recommendations.

Both the Hybrid Intermediate Algebra and Hybrid College Algebra classes during the Spring 2006 and Fall 2006 semesters have been successful. Students comment on their

appreciation of courses offered in this format and are enthusiastic about their success. As shown in Figure 3, 18 of 19 students successfully passed Hybrid Intermediate Algebra with a "C" or better in Spring 2006. Of those students continuing on to Hybrid College Algebra the second 8-weeks, 15 students passed Hybrid College Algebra with a "C" or better.

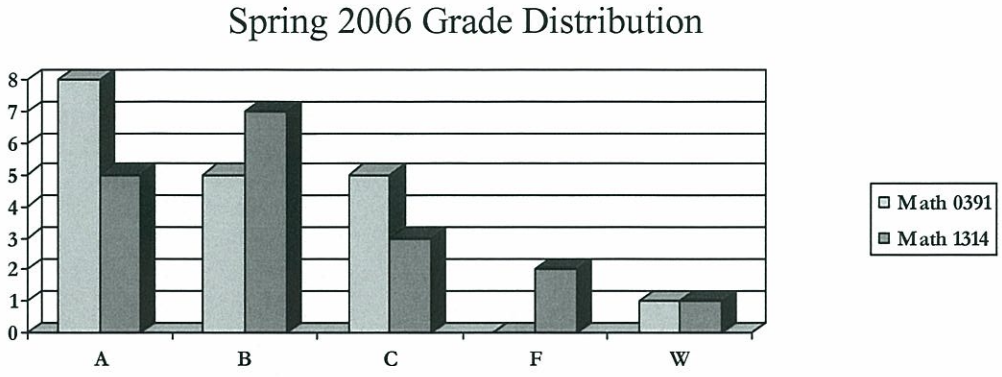

Figure 3: Spring 2006 Grade Distribution for Hybrid Intermediate Algebra and Hybrid College Algebra

As shown in Figure 4, the Fall 2006 semester of accelerated hybrid courses resulted in a 100% success with all students passing both hybrid courses with a "C" or greater.

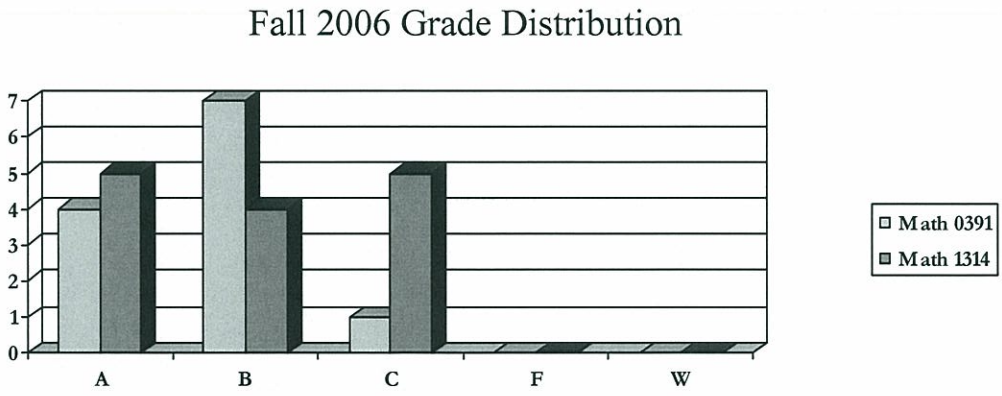

Figure 4: Fall 2006 Grade Distribution for Hybrid Intermediate Algebra and Hybrid College Algebra

For most of the students who participated in the accelerated hybrid courses in both Spring 2006 and Fall 2006 semesters, College Algebra was their terminal math course. However, from Spring 2006 one student enrolled in Math for Business and Social Sciences I, another student in Statistics, and yet another in Pre-Calculus during Fall 2006. Two of these students received an "A" in Math for Business and Social Sciences I and Statistics, and the other a "B" in Pre-Calculus. At the time of this presentation and paper, two of the students have continued with Calculus I and Math for Business and Social

Sciences II. From the Fall 2006 semester, two students are currently enrolled in Pre-Calculus and one student is currently enrolled in Trigonometry.

After the success of Hybrid Intermediate Algebra and Hybrid College Algebra, I have also developed and I am currently teaching an accelerated Hybrid Introductory Algebra and Hybrid Intermediate Algebra course. The formats of these courses are similar to the pilot Hybrid Intermediate and Hybrid College Algebra courses, with enrollment based on higher placement scores or prior instructor recommendation. In Fall 2007, the Midland College Mathematics Department will develop and offer an accelerated Hybrid Basic Mathematics course and an accelerated Hybrid Introductory Algebra course. The goal is to give eligible students the opportunity to complete four semesters of coursework in only two 16-week semesters.