Fall 2010 Lower Division Mathematics Course Summary

Prepared by Alice Moua
February 17, 2011

Fall 2010 Semester Course Overview

What follows is a brief overview of mathematics courses during the fall 2010 term. For the purpose of this document, a letter grade of "C-" or higher is considered "passing."

- Math 005 – 71.3% (383 of 537) passed
- Math 011 – 71.3% (224 of 314) passed
- Math 012 – 77.3% (75 of 97) passed
- Math 015 – 94.8% (220 of 232) passed
- Math 021 – 77.7% (171 of 220) passed
- Math 022 – 79.0% (94 of 119) passed
- Math 023 – 67.5% (79 of 117) passed
- Math 024 – 82.1% (96 of 117) passed

Math 005: Preparatory Calculus

Of the 537 students enrolled at the end of fall 2010, 71.3% (383) passed. At mid-semester 75.8% (407) of the 327 students were passing, and 6 students dropped after mid-semester grades. Please refer to Figure 1 for the final grade distribution, including those students who dropped.

Figure 1. Math 005 Final Grade Distribution – Fall 2010

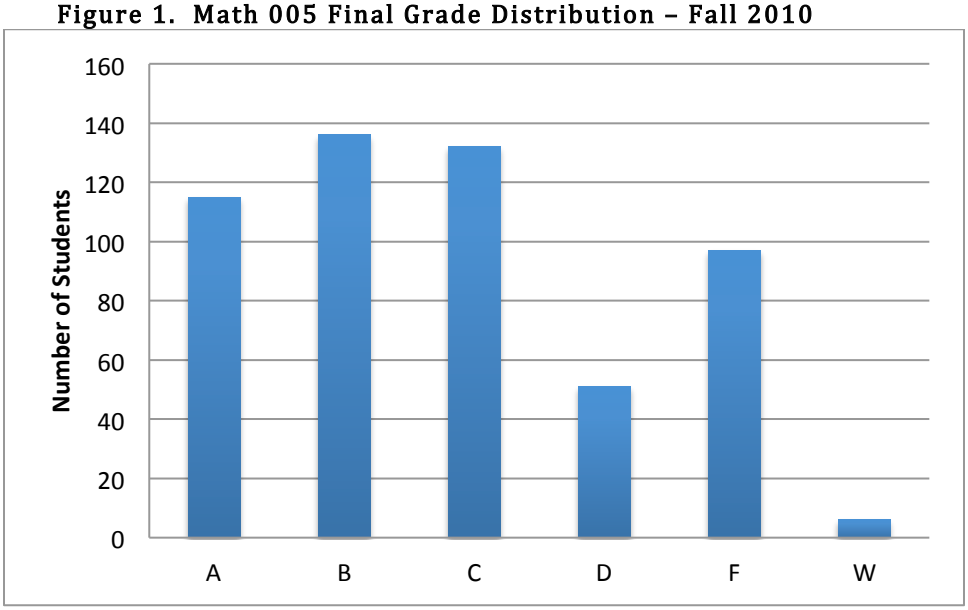


Table 1, below, shows the mid-semester and final pass rates for academic years (AY) 2006-2007, 2007-2008, 2008-2009, 2009-2010 and 2010-2011. Of notice are the final pass rates of 43.4%, 56.3%, 57.1%, 63.3% and 57.5% for spring 2008, fall 2008, spring 2009, fall 2009 and spring 2010, respectively. The final pass rate in fall 2010 had a significant increase of 13.8% to the 57.5% in spring 2010. We hope that the passing rate continues to increase.

Table 1. Math 005 Mid-Semester and Final Pass Rates by Term

Fall	Total	Midterm*	Final	Spring	Total	Midterm*	Final
2006	177	143 (80.8%)	126 (70.8%)	2007	46	38 (82.6%)	34 (73.9%)
2007	293	186 (62.8%)	209 (71.3%)	2008	129	82 (63.5%)	56 (43.4%)
2008	350	179 (51.3%)	197 (56.3%)	2009	175	113 (63.5%)	100 (57.1%)
2009	430	323 (74.4%)	272 (63.3%)	2010	327	210 (64.2%)	188 (57.5%)
2010	537	407 (75.8%)	383 (71.3%)				

*In general, total number of Math 5 students prior to Midterm report is slight higher than total number reported here. Numbers of students tends to withdraw the class after having a Midterm grade report.

Composition by Major

Figure 2 below shows the percentage of students enrolled by major. The majority of students enrolled in the course declared a major in Biological Sciences, which makes up the 45.5% of students who failed as shown in Figure 3 below.

Figure 2. Math 005 Composition by Major – Fall 2010

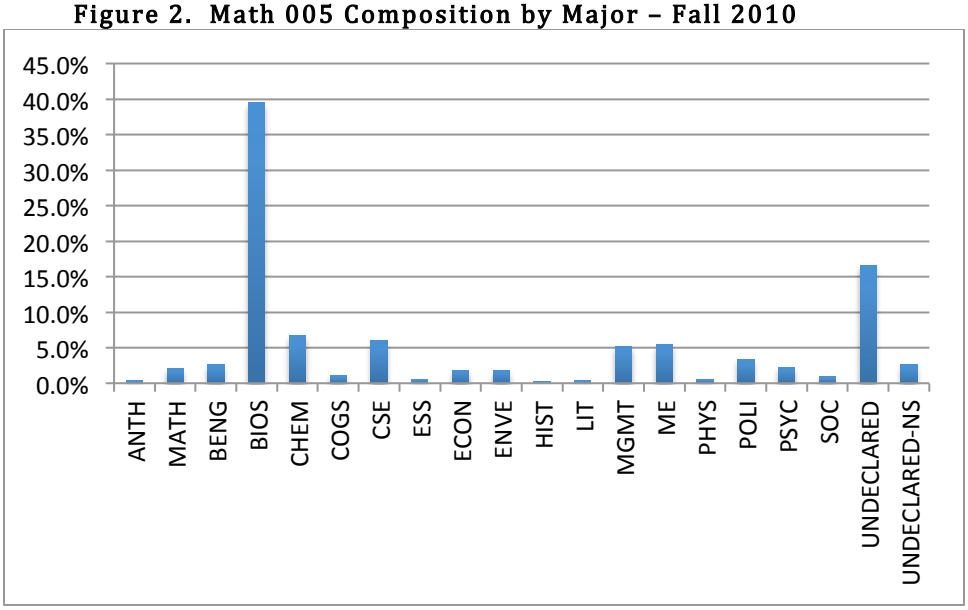
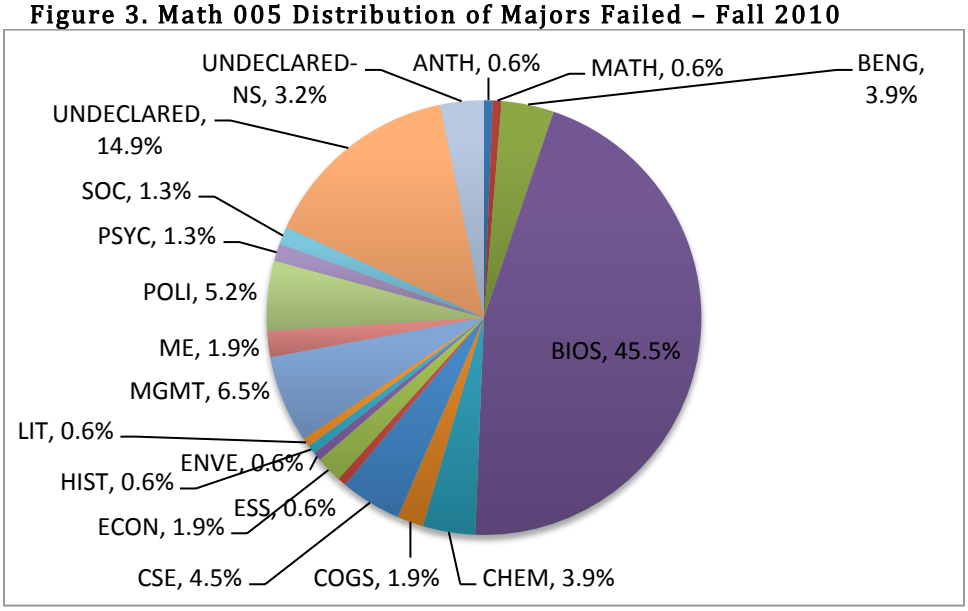


Figure 3. Math 005 Distribution of Majors Failed – Fall 2010



By Section

Viewing final pass rates by section yields the following:

- Section 1 (Stolberg) – 53.3% of 30 passed
- Section 2 (Stolberg) – 63.3% of 30 passed
- Section 3 (Marks) – 83.3% of 30 passed
- Section 4 (Stolberg) – 66.7% of 30passed
- Section 5 (Marks) – 90.0% of 30 passed
- Section 6 (Stolberg) – 69.0% of 29 passed
- Section 7 (Hambley) – 43.3% of 30 passed
- Section 8 (Marks) – 76.7% of 30 passed
- Section 9 (Hambley) – 70.0% of 30 passed
- Section 10 (Hambley) – 70.0% of 30 passed
- Section 11 (Inan) – 82.8% of 29 passed
- Section 12 (Hambley) – 70.0% of 30 passed
- Section 13 (Inan) – 75.9% of 29 passed
- Section 15 (Inan) – 51.7% of 29 passed
- Section 16 (Inan) – 76.7% of 30 passed
- Section 17(Marks) – 76.7% of 30 passed
- Section 18 (Crona) – 80.6% of 31 passed
- Section 19 (Crona) – 83.3% of 30 passed

Math 11: Calculus I

Of the 314 students enrolled, 71.3% passed. Figure 6, below, shows the fall 2010 final grade distribution. Figure 7 shows the distribution of majors in the course.

Figure 6. Math 011 Final Grade Distribution – Fall 2010

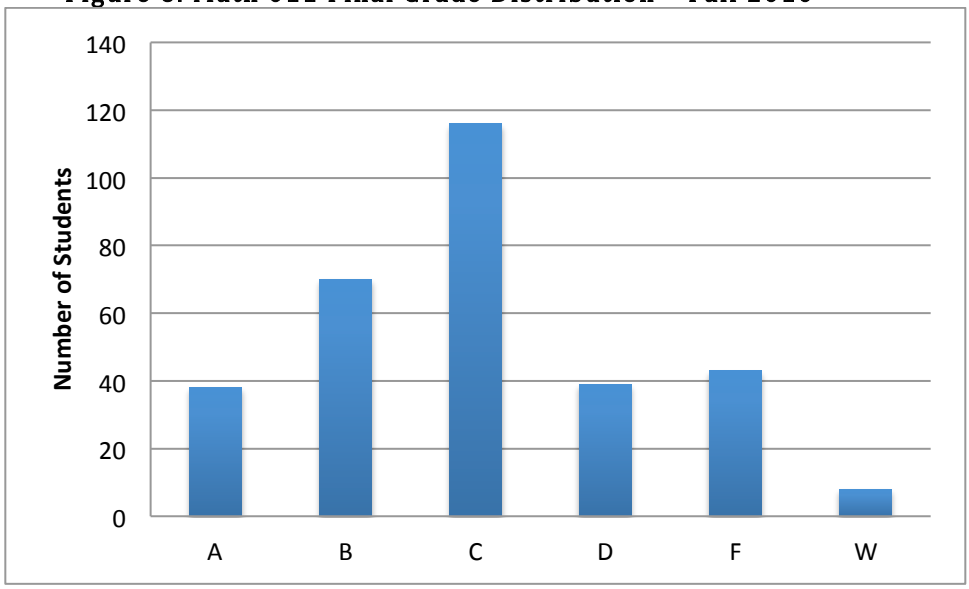
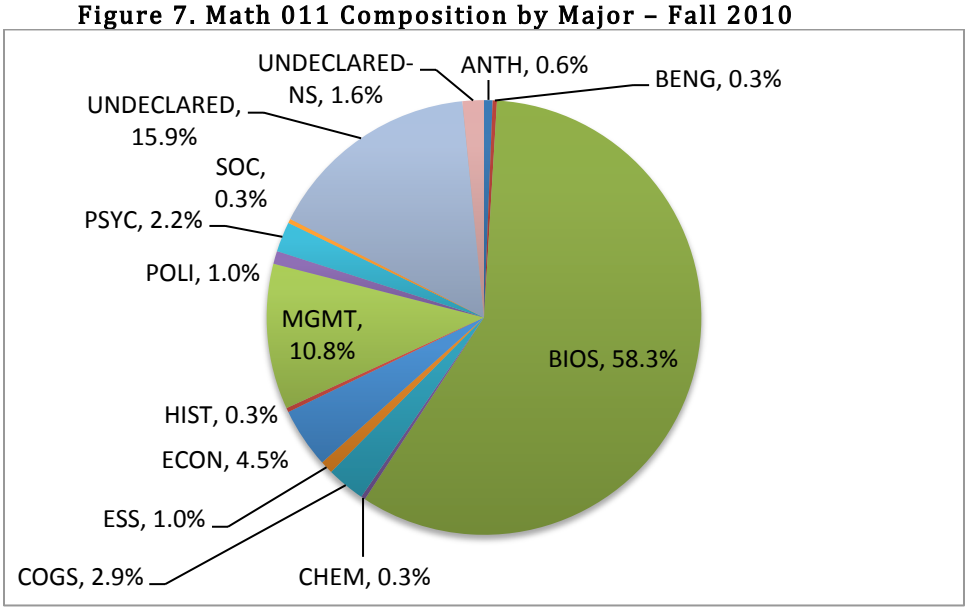


Figure 7. Math 011 Composition by Major – Fall 2010



Math 12: Calculus II

Of the 97 students enrolled, 77.3% passed. Figure 6, below, shows the fall 2010 final grade distribution. Figure 7 shows the distribution of majors in the course.

Figure 6. Math 012 Final Grade Distribution – Fall 2010

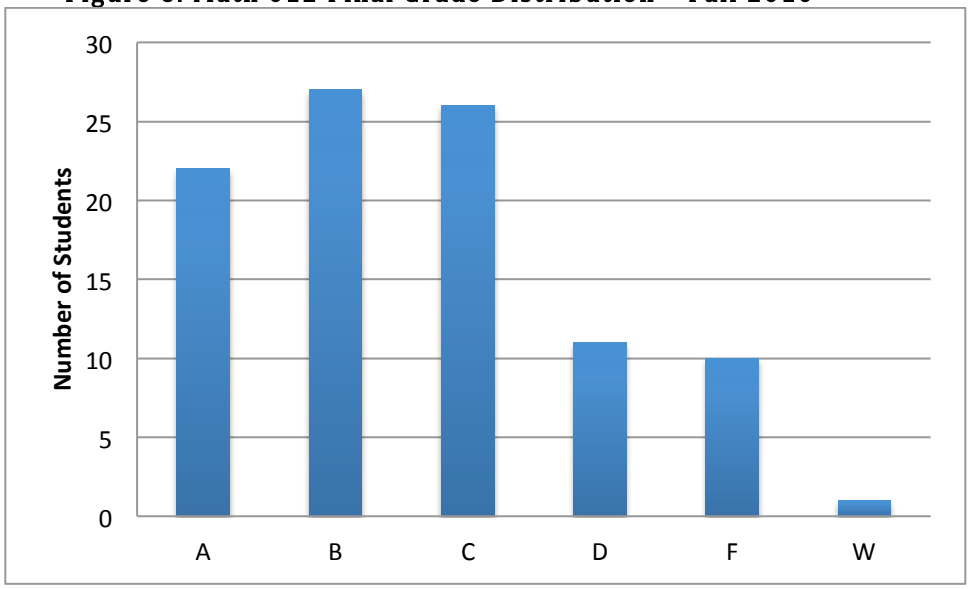
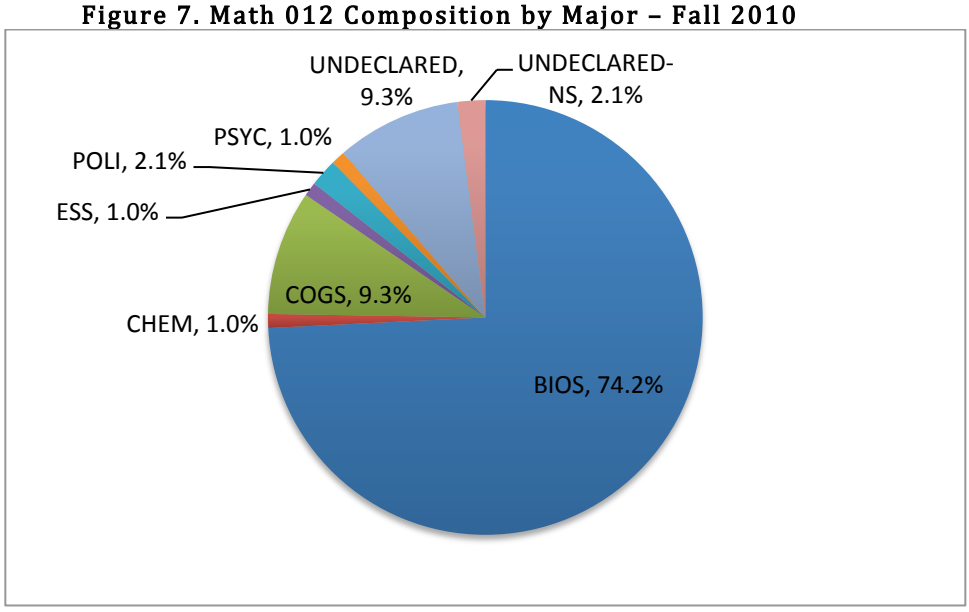


Figure 7. Math 012 Composition by Major – Fall 2010



Math 15: Introduction to Scientific Data Analysis

Of the 232 students enrolled, 94.8% passed. Figure 4 below shows the fall 2010 final grade distribution. Figure 5 shows the distribution of majors in the course.

Figure 4. Math 015 Final Grade Distribution – Fall 2010

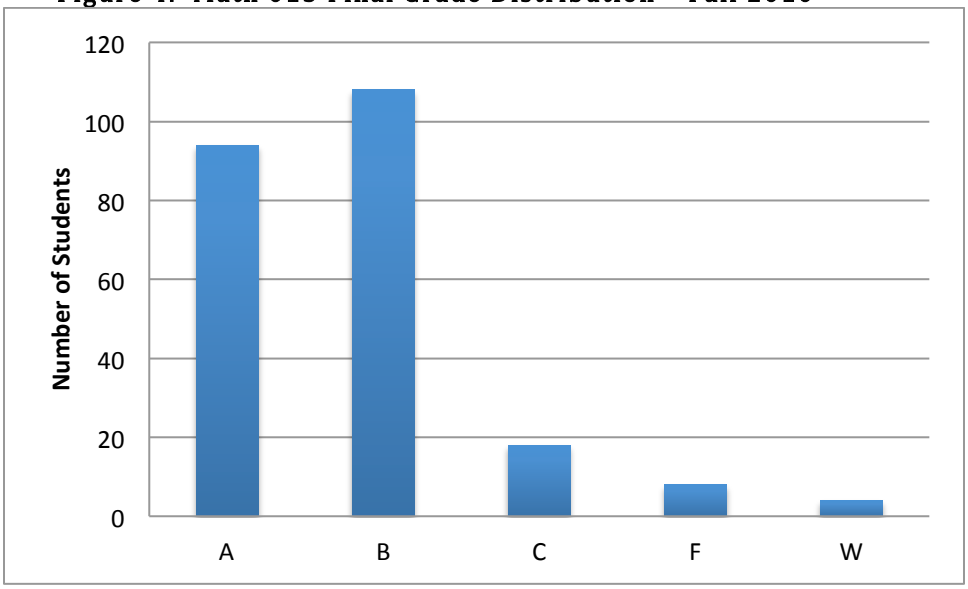
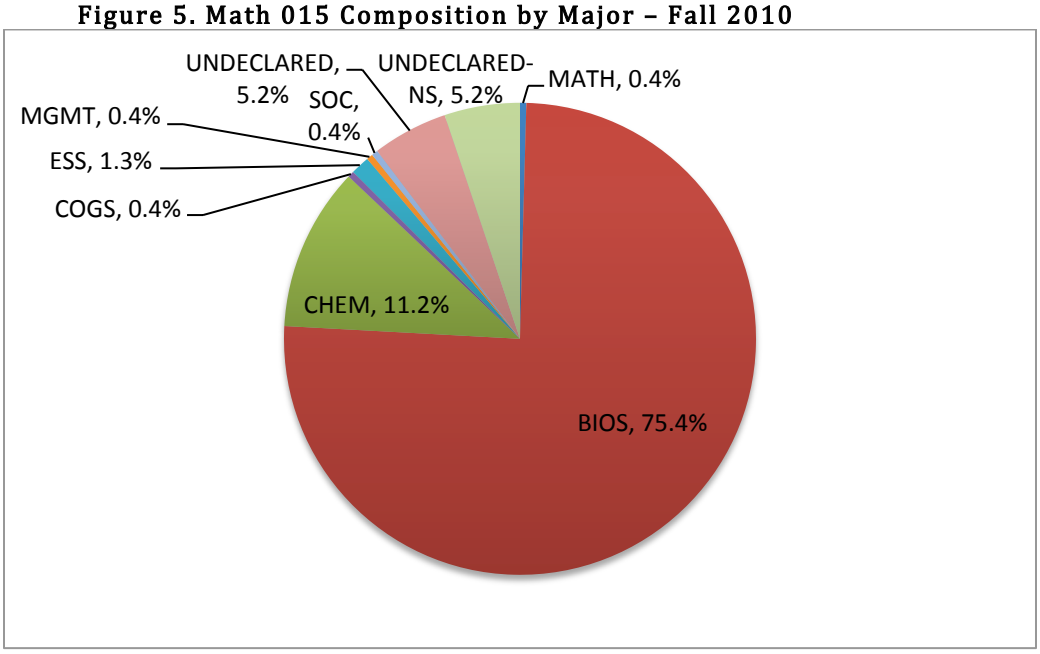


Figure 5. Math 015 Composition by Major – Fall 2010



Math 21: Calculus I

Of the 220 students enrolled at the end of fall 2010, 77.7% passed. Figure 8, below, shows the fall 2010 final grade distribution.

Figure 8. Math 021 Final Grade Distribution – Fall 2010

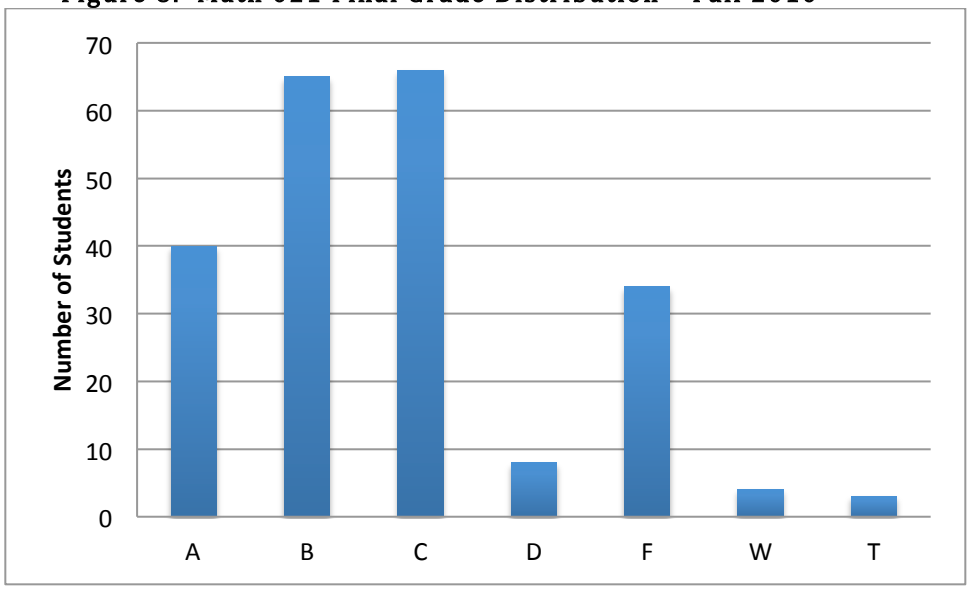


Table 3, below, shows the mid-semester and final pass rate for AY 2006-2007, 2007-2008, 2008-2009, 2009-2010 and 2010-2011.

Table 3. Math 021 Mid-semester and Final Pass Rates by Term

Fall	Total	Mid	Final	Spring	Total	Mid	Final
2006	234	137 (58.5%)	166 (70.9%)	2007	128	56 (43.8%)	81 (63.3%)
2007	153	109 (71.2%)	83 (55.0%)	2008	213	155 (72.8%)	162 (76.1%)
2008	303	232 (76.6%)	178 (58.7%)	2009	266	168 (61.3%*)	154 (57.9%)
2009	317	236 (74.4%)	200 (63.9%)	2010	344	250 (72.7%)	217 (63.1%)
2010	220	178 (80.9%)	171 (77.7%*)				

*In general, total number of Math 21 students prior to Midterm report is slight higher than total number reported here. Numbers of students tends to withdraw the class after having a Midterm grade report. However, this number can be fairly offset by the number of Transfer students, whose grades are shown as 'T" but analyzed as "Not Passing".

As shown in Table 3, the midterm and final pass rate in fall 2010 are the highest we have seen, with significant increases from previous fall and spring semesters. We hope that students continue to do better and the passing rate continues to incline.

Course Clustering by Major

Figure 9, below, shows the percent enrolled by major in Math 21 during fall 2010. The following chart, Figure 10, shows the percentage of students failing by Natural Sciences major. As shown, 28.5% of Biological Sciences majors in this course failed, 19.2% of Chemistry majors failed, 33.3% of Physics majors failed, 29% of Undeclared majors failed, and no ESS majors failed. Figure 11 shows the distribution of majors who failed Math 21.

Figure 9. Fall 2010 Math 021 Course Enrollment – Percent by Major

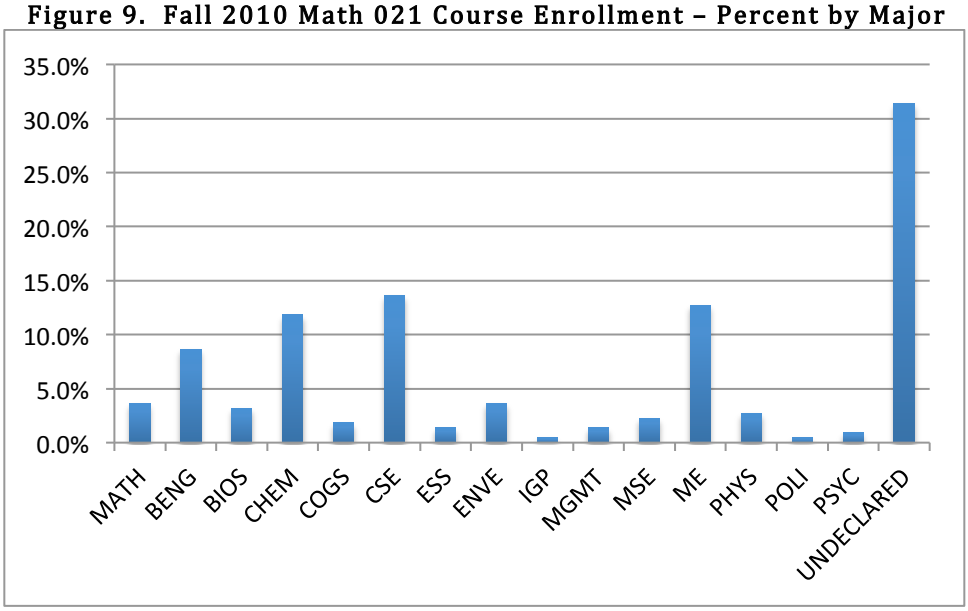


Figure 10. Fall 2010 Math 021 Failure Rates by Natural Sciences Major

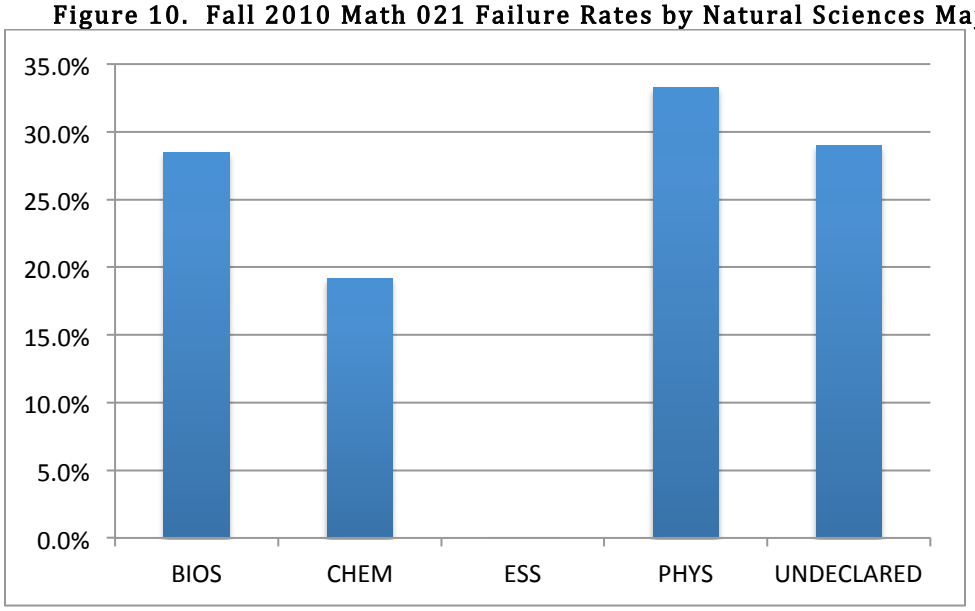
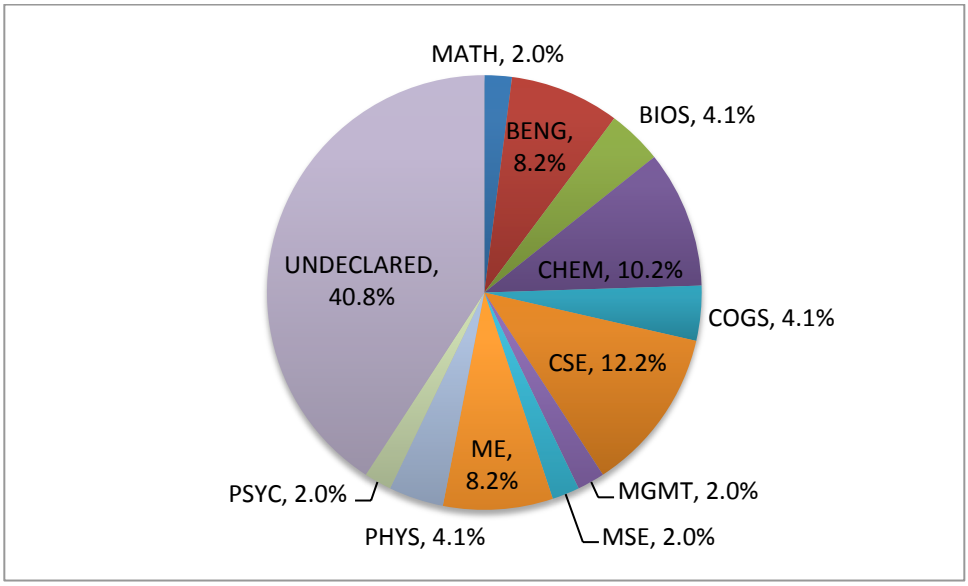


Figure 11. Fall 2010 Math 021 Distribution of Majors Failed



Math 22: Calculus II

Of the 119 enrolled, 79% passed Math 22. Figure 12, below, shows the fall 2010 final grade distribution including the 1 student who dropped after mid-semester grades. Figure 13 shows the distribution of majors in the course.

Figure 12. Math 022 Final Grade Distribution – Fall 2010

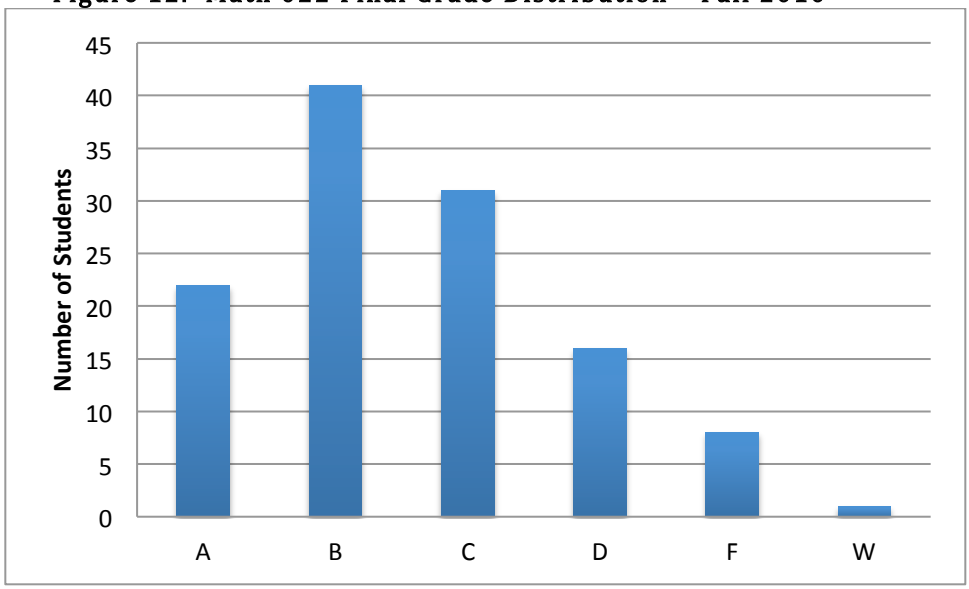


Figure 13. Math 022 Composition by Major – Fall 2010

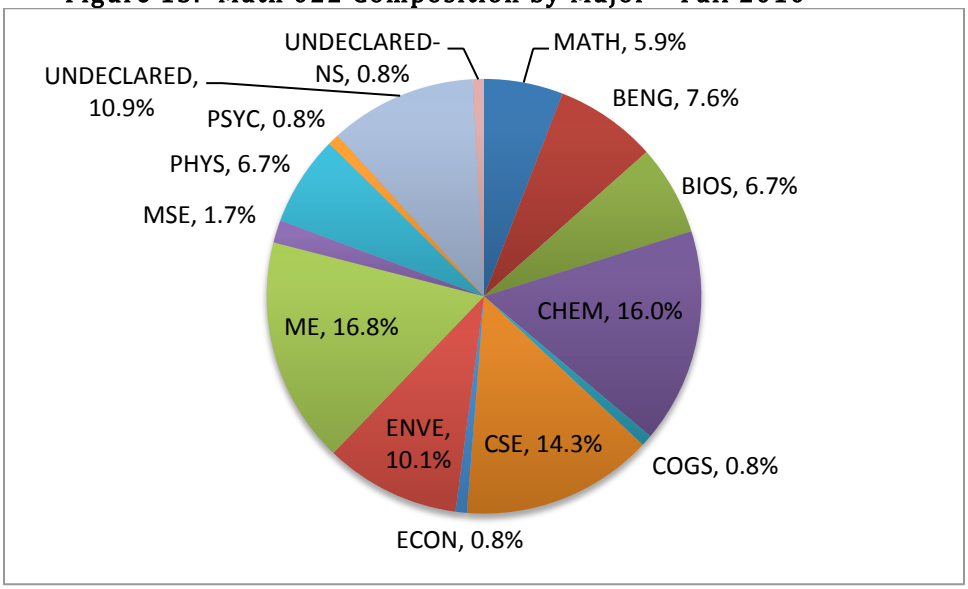


Table 4, below, shows the mid-semester and final pass rate for AY 2006-2007, 2007-2008, 2008-2009, 2009-2010, and 2010-2011. Math 22 was fairly consistent over the previous 5 academic years, but midterm and final pass rates for fall 2010 showed a significant decrease from spring 2010.

Table 4. Math 022 Mid-semester and Final Pass Rates by Term

Fall	Total	Midterm	Final	Spring	Total	Midterm	Final
2006	113	54 (47.8%)	69 (61.1%)	2007	139	40 (28.8%)	54 (39.1%)
2007	121	102 (84.3%)	93 (76.9%)	2008	136	84 (61.8%)	100 (73.5%)
2008	156	122 (78.2%)	112 (71.8%)	2009	174	144 (82.3%*)	133 (76.4%)
2009	166	112 (67.5%)	132 (80.5%)	2010	171	140 (81.9%)	142 (83%)
2010	119	73 (61.3%)	94 (79%)				

Math 023: Vector Calculus

Of the 117 students enrolled, 67.5% passed Math 23. Figure 14, below, shows the fall 2010 final grade distribution including the 3student that dropped and 1 with an "Incomplete". Figure 15 shows the percentage of the different majors in the course.

Figure 14. Math 023 Final Grade Distribution – Fall 2010

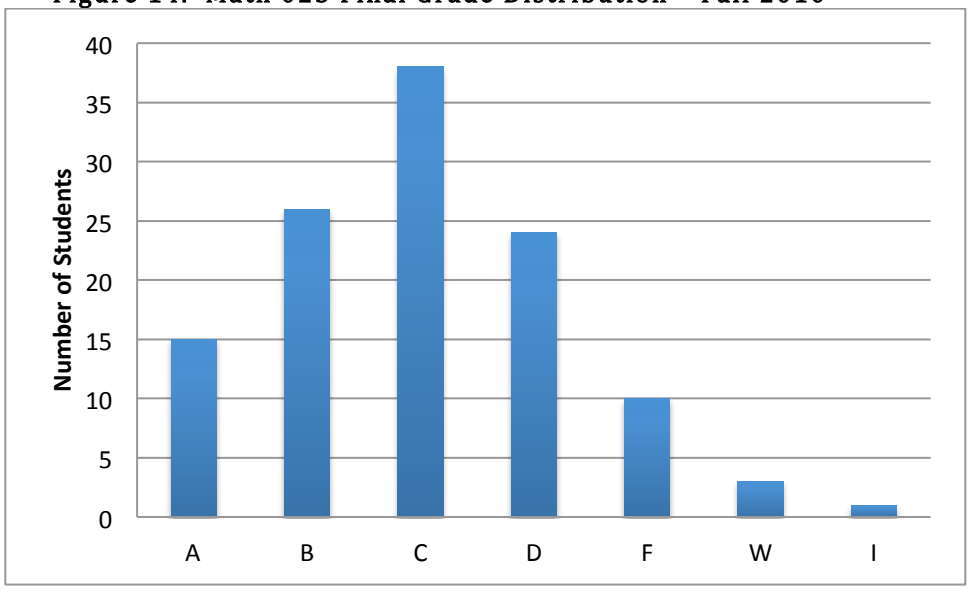


Figure 15. Math 023 Composition by Major

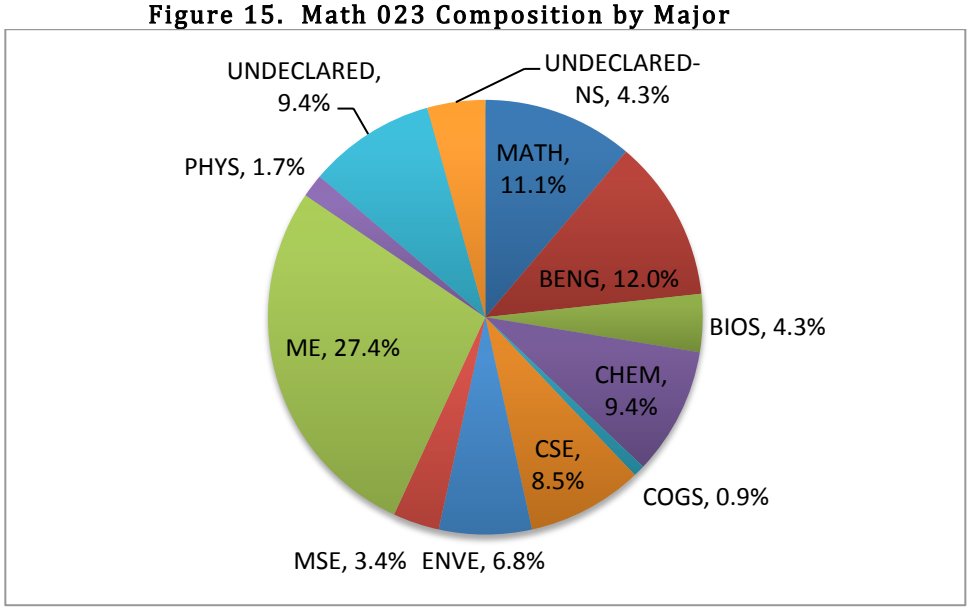


Table 5, below, shows the mid-semester and final pass rate for AY 2006-2007, 2007-2008, 2008-2009, 2009-2010 and 2010-2011.

Table 5. Math 023 Mid-semester and Final Pass Rates by Term

Fall	Total	Midterm	Final	Spring	Total	Midterm	Final
2006	45	23 (51.1%)	27 (60.0%)	2007	56	39 (69.6%)	45 (80.4%)
2007	56	37 (66.1%)	37 (66.1%)	2008	56	24 (42.9%)	27 (48.2%)
2008	78	56 (71.8%)	50 (64.1%)	2009	91	57 (62.0%*)	63 (69.2%)
2009	129	99 (72.8%)	106 (82.2%)	2010	98	74 (75.5%)	68 (69.4%)
2010	117	93 (79.5%)	79 (67.5%)				

Math 24: Linear Algebra and Differential Equations

Of the 117 students enrolled, 82.1% passed. Figure 16, below, shows the fall 2010 final grade distribution. Figure 17 shows the distribution of majors in the course.

Figure 16. Math 024 Final Grade Distribution – Fall 2010

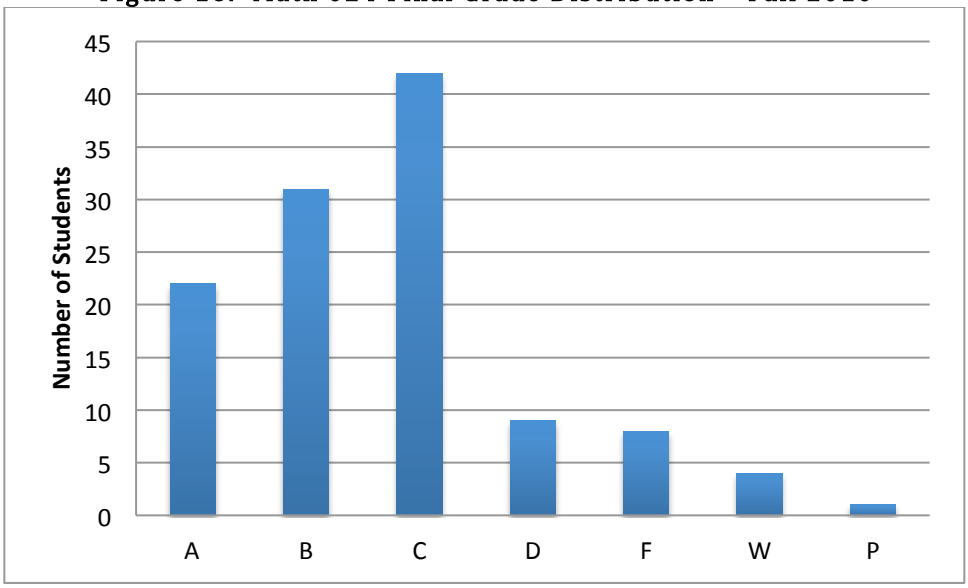


Figure 17. Math 024 Composition by Major – Fall 2010

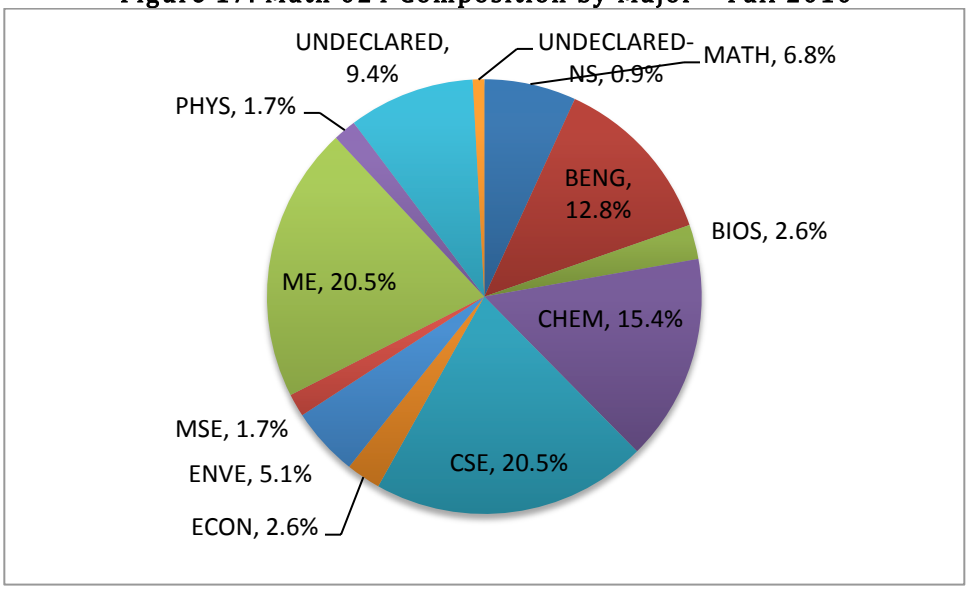


Table 6, below, shows the mid-semester and final pass rate for AY 2006-2007, 2007-2008, 2009-2010, 2009-2010 and 2010-2011.

Table 6. Math 024 Mid-semester and Final Pass Rates by Term

Fall	Total	Midterm	Final	Spring	Total	Midterm	Final
2006	30	26 (86.7%)	25 (83.3%)	2007	31	24 (77.4%)	23 (74.2%)
2007	49	35 (71.4%)	35 (74.4%)	2008	77	56 (72.7%)	58 (75.3%)
2008	71	53 (74.6%)	54 (76.1%)	2009	83	56 (67.5%)	63 (75.9%)
2009	81	60 (74.1%)	66 (83.5%)	2010	123	81 (65.9%)	98 (79.7%)
2010	117	67 (57.3%)	96 (82.1%)				