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Summary of Year One ALEKS Results

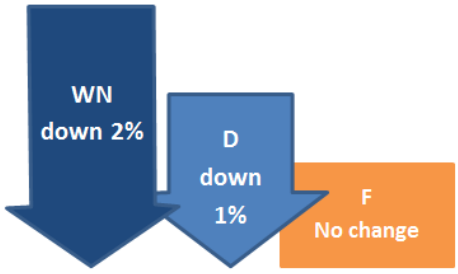
Beginning in fall 2014, all new Penn State students used ALEKS, an online adaptive placement test, for placement into calculus-sequence MATH courses. Pre-requisites for calculus-sequence courses, defined as credit for the pre-requisite course (PSU, TR, or AP) or sufficient ALEKS score, were enforced.

A total of 18,545 paid accept first year and advanced standing new students tested Summer/Fall 2014

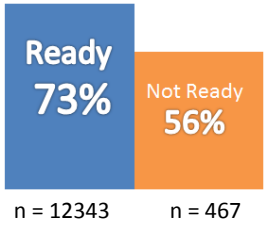
- 12,563 (68%) enrolled in calculus-sequence courses (the remainder of students who took ALEKS enrolled in MATH 141, a non-calculus-sequence course (e.g., MATH 034), or did not enroll in a math course at all)
- 89 students did not meet the pre-requisite for their registered MATH course at end of add/drop in Fall 2014 (most had late New Student Orientation (NSO) and some chose to go against the placement)

Key outcomes

1. **Decrease in D/F/WN grades:** Overall D/F/WN grade percentages declined by 3%, with a 2% decline in late drops (WN), a 1% decline in D grades and no change in F grades. The increase in A/B/C grades was distributed broadly.

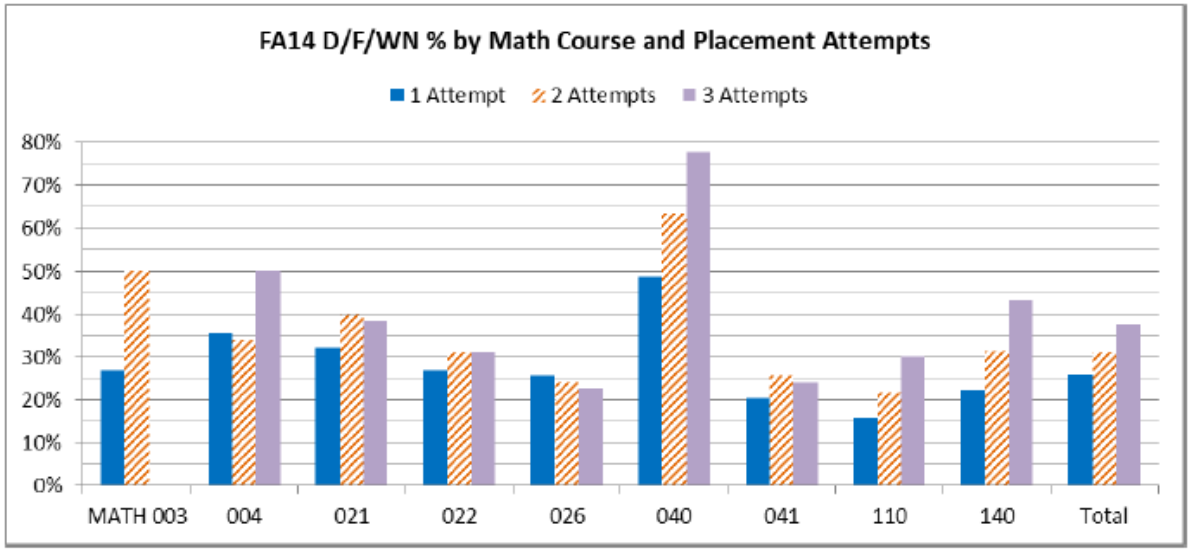


2. **Following the ALEKS placement correlates with greater success:** Students who took the course for which they demonstrated readiness via ALEKS were much more successful than those whose score was below the course placement, even if they had prior credit.



73% of students whose ALEKS score placed them into a course earned A/B/C grades, while 54% of students with ALEKS scores below the course minimum earned A/B/C grades. Although the number of students "Not Ready" is small, the difference is statistically significant.

3. **The effect of remediation varied between courses:** 90% of students who used Prep & Learning increased course placement by at least one course, and many of those students were successful. Students who remediated into pre-calculus courses often did as well as others. However, success was highest in MATH 110 and MATH 140 for students who followed their first placement.



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Common scenarios where ALEKS data may inform decisions

1. *Student started a course, but now wants to use ALEKS to make a change*

   The ALEKS system is designed to accurately place students into the first Penn State calculus-sequence MATH course where their chance of succeeding is good. It was not designed to enable students to bypass courses after beginning classes and is not available to students past the drop/add period of their first Fall or Spring semester.

2. *Student is heading in an academic direction that does not require calculus or a calculus-sequence course*

   Students who take MATH 110 or MATH 140, but don't need it for their degree late drop at much higher rates. These students may be more persistent in non-calculus sequence GQ courses that situate mathematics in contexts more relevant to their interests.

3. *Student has credit for pre-requisite course, but ALEKS score is below course minimum*
4. *Student's ALEKS score is close to the minimum, and student wants to be allowed to enroll anyway*
5. *The course a student needs is not offered by the student's campus*

   The same data inform all three of these scenarios. In almost every course, students with ALEKS scores below the minimum placement were significantly less successful than those whose score qualified them for the course. Given that the ALEKS assessment is a more recent snapshot of what students learned and remember, this result is not surprising. When deciding to select a course on the basis of prior credit, students should be advised to use all the resources available, including ALEKS Prep & Learning and campus-based resources.

6. *Student places into MATH 003 or 004*

   If student has only used the first placement attempt, investment in Prep & Learning will likely help the student move up a course. If so, the student should be strongly encouraged to use campus support resources. If the student places into MATH 003 or MATH 004 on the second or third attempt, the student needs additional support, which varies dramatically by campus. When students bypass a course because it is not offered, their success rates are lower than for other students.

The chart below is relevant to questions 3-6. Students who placed into their courses in different ways had differential success in calculus-sequence courses.

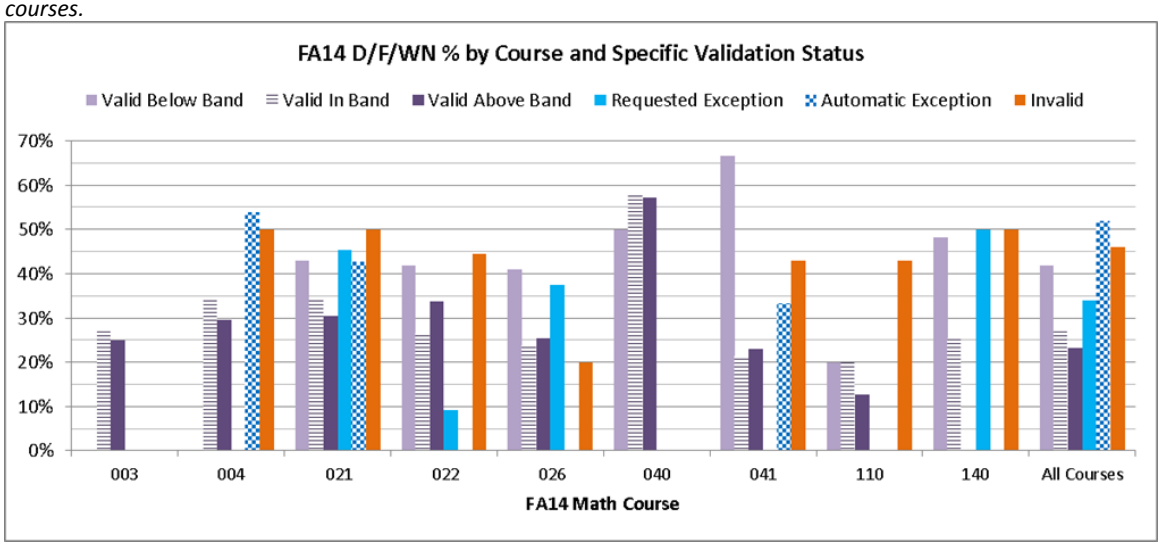

Chart Key: Valid below band = has TR, AP, or PSU credit for pre-requisite but an ALEKS score below the placement band
Valid in band = has ALEKS score in placement range
Valid above band = ALEKS score qualified student for a higher course
Requested exception = faculty or adviser allowed student into course without a qualifying ALEKS score
Automatic exception = campus does not offer the course student placed into, so they must take the next higher
Invalid = student does not meet pre-requisites in any of the previous ways.