

ABSE PreAlgebra / Beginning Algebra (formerly Foundations for College Math): JDEI Curriculum Development Report

Fall 2024

Summary of Results

- Enrollment, testing, and course completion numbers indicate a strong need for introductory algebra courses offered by the ABSE department. Student feedback supports the importance of providing additional time to build foundational skills and develop strong connections between pre-algebra and algebra concepts.
- Students who have remained active in courses throughout the term show steady progress towards GED completion, enrollment in a higher level course, and transition to credit math.
- Feedback from college partners and enrollment patterns in credit math courses confirms a need for developmental level math options at the College.
- Department and institutional support are needed to identify, attract and enroll students in the most appropriate course for their needs and goals. We are working with department staff and campus partners to revise or build these systems.
- As part of our continuous improvement process, we will evaluate the effectiveness of the two-term PreAlgebra / Beginning Algebra sequence over the course of the academic year and revise or build on course elements to best meet the needs and goals of students.

Purpose and Outcomes of Course

The ABSE math curriculum aligns to OACCRS state standards for adult education, GED standards, and the Lane CC credit math pathways, with the goal of helping students prepare to complete the GED mathematics exam, transition to program level math, or develop math skills necessary for the workplace. Our ongoing process of program improvement indicated that our existing math curriculum needed revision at the OACCRS D level in order to clarify the pathways to these varied goals and better prepare students for work in algebra. Prior to this year, most students at this level enrolled in ABSE Foundations for College Math, a 1-term course focused on a broad range of prealgebra and introductory algebra skills. This course covered a large amount of content and many students needed to retake the course one or more times before they demonstrated proficiency with course outcomes, slowing their progress towards completion and negatively impacting retention. We made the decision to redevelop FCM into a 2-term sequence consisting of PreAlgebra and Beginning Algebra.

This two-term Level D math sequence provides ABSE students with a more incremental onramp to advanced algebraic problem solving, providing much-needed time for students to develop confidence and abstract thinking skills while building foundational computation and problem solving abilities. Additionally, the two-term structure allows students with the goal of entering the workplace or a CTE program to complete their GED test and move on to their goal after only one term, while students with a goal of higher level college math can opt to continue into the second term (and beyond in some cases). Specific and measurable outcomes include:

- Increased GED practice and official GED test scores in Mathematical Reasoning.
- Increased persistence from Level D math to GED completion, Level E math, and/or program level credit math
- Increased computer literacy

- Improved learning techniques and strategies through metacognitive engagement
- Increased sense of belonging in an educational setting
- Increased awareness about career and college options
- Increased number of students who progress to credit bearing classes

Students Served

During the Fall 2024 term, we offered two sections (morning and evening) of PreAlgebra and Beginning Algebra:

- PreAlgebra (in person hybrid, two sections): 55 enrolled, 34 retained
- Beginning Algebra (one hybrid IP section, one hybrid Zoom section): 31 enrolled, 13 retained

[It should be noted that the introduction of these classes coincided with a transition from the use of the hyflex modality for nearly all ABSE classes to the use of the in-person modality for most classes. Some students expressed confusion about course modality during the enrollment process; consequently, we had an unusually high number of students drop classes during the early weeks of the term when they determined that the course modality would not work for them.]

Enrollment in these classes is reflective of overall ABSE enrollment . Our department serves a highly diverse student population; nearly 100% of ABSE students are socioeconomically disadvantaged and 44.5% belong to a racially marginalized and historically underrepresented group.

Goal Assessment

Students in PreAlgebra and Beginning Algebra develop a deeper understanding of pre-algebra and introductory algebra concepts thanks to additional time for project-based, contextualized learning. Also included in these classes are opportunities to explore and access campus and community resources that support success in mathematics, practice active study strategies, and learn about math requirements and options at the College. Students are introduced to services provided by campus partners that promote success, retention, and degree completion.

Progress towards goals for these courses includes:

- **Increased GED practice and official GED test scores:** Testing is still in progress at this point in the term, but to this point, the majority of GED-goal students in both courses have taken GED Ready practice tests, with most students scoring in the likely-to-pass range. For PreAlgebra, of 18 students taking the GED Ready test this term, 10 scored in the likely-to-pass range and 5 students were within 5 points of the passing range. In the Beginning Algebra class, of 15 GED Ready test takers this term, 12 scored in the likely-to-pass range and the remaining students were within 5 points of the passing range. Additionally, 3 Beginning Algebra students took and passed their official GED Mathematics test this term.
- **Increased persistence through course levels:** 16 PreAlgebra students and 5 Beginning Algebra students are on track to progress to a higher level of math during Winter term. [It should be noted that not all students have an additional math class in their academic plan.]
- **Computer literacy:** Following initial orientations to course technology, very few issues with student technology literacy have arisen this term. Hardware/software issues were supported by SHED presence on both campuses.
- **Learning techniques and strategies:** Follow-up data will need to be collected in this category; students in both courses received scaffolded instruction in college success behaviors.

- **Increased sense of belonging in an educational setting:** Students report that being back on campus has helped them feel more connected to cohort peers and support resources, such as tutoring and the SHeD. Students also have more direct contact with STAR program advisors and academic advisors.
- **Increased awareness about career and college options:** In addition to sharing information in class, students receive presentations on transitioning to credit programs from STAR program advisors. As students develop their program plans, they determine their future math pathway.
- **Increased number of students who progress to credit bearing classes:** We will need to track follow up data for each student cohort to gauge success in this area.

Instructor Observations

While we need to conduct additional course evaluations and collect comparative data, the early observations of the two instructors teaching PreAlgebra and Beginning Algebra indicate that restructuring our course sequence is providing the desired effect. In particular, splitting Level D content into a 2-term sequence has provided time for students to engage in deeper learning while slightly expanding the breadth of content presented. In the PreAlgebra class, instructor Julie Pfaff notes that students “have more time to build proficiency with basic skills while identifying connections between past learning and algebraic thinking.” Beginning Algebra instructor Minoo Marashi observes, “I was a little nervous about the pace of the course, but it ended up being a nice pace where the class never feels rushed and we often have extra time for review.”

Student Observations

Students at this level report increased confidence with their math skills. Some feedback from students:

I've learned a lot in this class!

I already feel really confident It's just what we have already done. at the beginning of this class, I wasn't that confident. This class has helped me understand more about math in general. So with that being said I feel confident that I will move on to the next level.

I feel confident when I do the assigned work and ask questions.

As long as I continue to do tutoring, I feel like I'll be ready to take the GED practice test at the end of the term.

Based off of all my recent work and feedback on homework and quizzes, I believe I will have a good chance at moving on to the next level.

I do feel this course has helped me learn a lot in a very short period of time. I had never done algebra and I now feel less intimidated by it.

I feel somewhat confident, Most of the parts I'm lacking in are small. I'll continue to work on those.

I appreciate all the help there is to succeed.

I truly appreciate my instructor for working around my mental health barriers and still helping me move forward.

This is the fastest I have learned math.

Students routinely share with instructors how course completion and GED completion impact their lives. While we won't have actual numbers until the end of the term, we know that students will be coming back to our program, transitioning to credit programs, and/or taking on new workplace opportunities. One student, who has a job offer contingent on completion of his GED, has shared the profound impact that this educational milestone will have on his life, stating that "this will be life changing for me and my family."

Next Steps

As we evaluate this term and plan the next several terms of these courses, we have identified two key areas of focus. First, we need to fine-tune our placement guidelines and strengthen internal systems for matching new students to the correct class. Currently, we utilize the CASAS assessment to determine a student's level of mathematical skill, but we find this assessment to be somewhat imprecise. We are currently working on developing a system to help us collect from new students additional information to inform placement, without adding burdensome steps to our enrollment process.

Additionally, we need institutional support to identify and perform outreach to students who would benefit from ABSE math classes. We know that mathematics completion is a struggle for many students and a common barrier to program completion. As fewer developmental math classes are offered by the math department, students who need to refresh basic skills, build confidence, and try college math in a low stakes environment could benefit immensely from ABSE courses. Institutional support with funding, marketing, and advising would allow us to reach students who would benefit from developmental math and expand the number of sections we can offer. This would provide capacity to offer sections at various times of day and in different modalities to meet the needs of students who cannot attend in person classes.

We'd like to express our gratitude to the JDEI Curriculum Development Fund; this funding allowed us to adapt our math curriculum to meet the changing needs of our students and provide more equitable access to mathematics and college success programming.