### **IHEMTAC Summer Conference 2025**

# Mathematics Curriculum Innovation in High School and College: Fostering Deep Learning and Successful Transition from High School through Post-Secondary Options

### AGENDA

The Iowa Higher Education Mathematics Transitions Advisory Council (IHEMTAC) is delighted to offer this summer conference for mathematics teachers from all institutions as well as school administrators, counselors, curriculum directors, and instructional coaches. We also welcome participation from supporters of this work and individuals interested in improving mathematics transitions within the state. This event will highlight mathematics curricular innovations across multiple institutions at the secondary and postsecondary levels.

### Envisioning the future while meeting current requirements: We can do both!

The overall theme for the conference is system and classroom innovations in areas of policy, curriculum, and instruction that provide opportunities for all students to achieve mathematics expectations, requirements, and career goals.

## Schedule:

8:00 AM	Welcome and Breakfast (provided)
9:00 AM	IHEMTAC Overview
9:30 AM	Session 1
10:45 AM	Break
11:15 AM	Session 2
12:30 PM	Lunch (provided)
1:30 PM	Session 3
2:45 PM	Break
3:00 PM	Session 4
4:15 PM	Closing remarks

## **Session Descriptions**

All sessions are conducted by IHEMTAC members and colleagues and will include interactive components and discussions.

# Session 1: Redesigning the Mathematics Curriculum to Incorporate New Standards, Pathways, and Best Practices

Erica Whittle, Johnston Public Schools, and Melissa Carlson, Ames Public Schools

Two secondary mathematics educators who have served as math curriculum coordinators will share their experiences, learnings, and recommendations in relation to implementing the new Iowa math standards with an eye towards increasing students' access to grade-level courses. Implications for curricular changes, supports for students, and redesigned pathways will be discussed.

# Session 2: Impact of Technological Innovation (AI) on the Mathematics Curriculum

Heather Bolles and Eric Weber, Iowa State University

The introduction of AI presents challenges and opportunities for curricular innovation. We will present how AI has been incorporated into the calculus curriculum at Iowa State University. Our presentation will include hands-on demonstrations for workshop participants (please bring an electronic device!) as well as prompts for experimentation.

## Session 3:

# Mathematical Preparation for College and Career Readiness

Eric Hart, Grand View University and John Hansen, Iowa Central Community College

This discussion-based session will focus on the following questions:

- 1. What algebra is necessary for college and career readiness?
- 2. What statistics is necessary for college and career readiness?
- 3. What about developing mathematical habits of mind and student engagement?
- 4. What is happening at your school, at your level, and in your classes, with algebra, with statistics and data science, and with developing students' mathematical habits of mind? How does this affect the mathematical transitions between high school and college and work?

IHEMTAC recommendations will be presented first and describe some trends at Iowa colleges. Participants will engage in breakout groups to discuss the questions above. The session will conclude with a synthesis of the main ideas.

## Session 4:

# **Assessing for Content Mastery**

Maryann Huey and Andrew Becklin, Drake University

Mastery-based learning is a relatively new term in college mathematics, but the concept has been in place for a long time. In this session, we will discuss key concepts of mastery-based learning and standards-based grading, a grading system that supports students' mastery of content. How these ideas can be applied to college courses will be shared as well as best practices associated with SBG and some "unknowns" in terms of long-term orientations to mathematics learning.