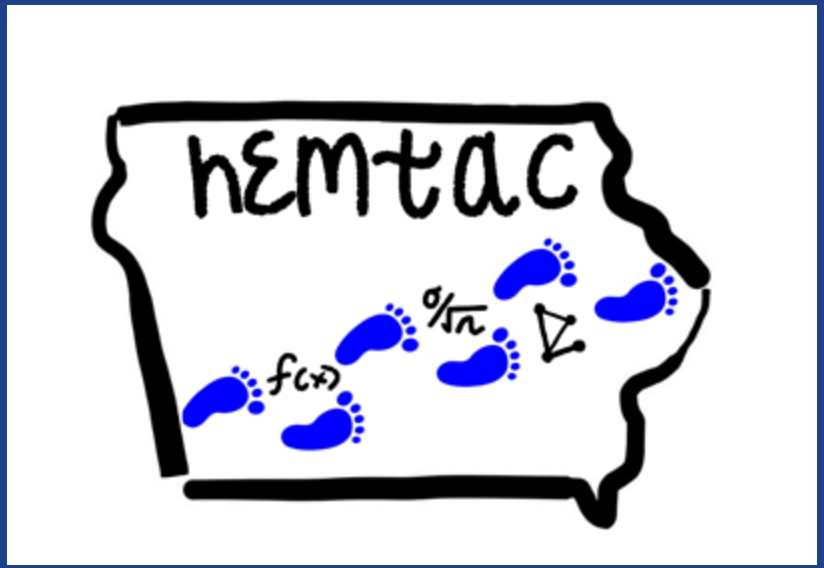

IHEMTAC Summer Conference

June 11 2025

Grand View University

IHEMTAC

The Iowa Higher Education Mathematics Transition Advisory Council will serve as a recommending body for the purpose of developing and issuing guidance on matters relating to the mathematics transitions students make from high school through college.

This academic year, we are focused on hosting regional workshops and supporting implementations of our work.

https://www.grandview.edu/academics/other-programs/ihemtac

Leadership Circle

- Claire Celsi, Iowa State Representative
- Jeremy Comer, Corteva
- David Gisch, DMACC
- Eric Lopez, US Air Force
- Matt Meendering, Dowling Catholic
- April Pforts, Iowa Dept of Education
- Sonia Reyes, Iowa Department of Health and Human Services
- Karen Ruiz, Office of Latino Affairs
- Lela Scott, Iowa Jobs for American Graduates

Steering Committee

- Maryann Huey, Action Group 1
- John Hansen, Action Group 2
- Sergio Loch, Action Group 3
- Eric Hart, Grand View University
- Robert Keller, Loras College
- Jon Read, Mason City CSD
- Anne Thomas, Bureau of College Aid
- Christi Donald, Iowa Dept of Education
- Eric Weber, LCAN Coordinator

Successes

- New website! (IHEMTAC in any search engine)
- Regional workshops
- Funding renewal (Bureau of College Aid, IDOE)
- New members
  - Jason Chung, Gilbert HS
  - Heather Gallivan, UNI
  - Brent Hamilton, NIACC
  - Sully Fitzgerald, Ankeny Christian Academy

Upcoming Year

- Kickoff Event – September, TBD
- Regional Workshops in September
  - Dordt, EICC, IWCC
- Dissemination of Findings
- Collection and analysis of data
  - Student success
  - College math/stat courses with no math prerequisite

THANK YOU!

- Kathy Rogotzke, NIACC
- Lori Robeson, IWCC
- Oguz Durumeric, University of Iowa
- Kathy Lamb, University of Iowa

Action Group I

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Funded by grant: LCAN 23-ICACE-022

High School Pathways Recommendations

- Recommend that all students take four increasingly rigorous high school-level math courses over 4 years.

- Ideally, pathways would begin after geometry and leverage the Iowa e-school initiative and work of CBMS. Pathways could include:
  - Applied algebra, data science, and statistics
  - Industrial mathematics pathway
  - Quantitative reasoning (Math for Liberal Arts)
  - STEM pathway

High School Pathways Recommendations

- Discuss alternatives to calculus in high school
  - Why they are needed and what those alternative might be.
  - Calculus is not required prior to college.
  - Acceleration in math does not translate to STEM degrees.
- Ensure that students have access to options after Algebra 2 like data science, applied math, statistics or quantitative reasoning (not just precalculus).

Action Group I - Present

- Review courses to ensure all students are offered and taught **all** of the Iowa Core Standards including algebra, geometry, numbers and quantity, probability and statistics, and voting theory.

- Continue to evaluate 4th year options for students who have access to and the opportunity to take courses that cover all the core standards.

Math Pathways Analysis

Overall, only 54% of Iowa HS students from the graduating class of 2020 received instruction that included three years of math in learning aligned with the Iowa Core. When students do take three years of Iowa Core math, they are much more likely to be proficient with 79% of student proficient who took three years of core compared to 51% proficient without three years of Iowa Core math.

Note: 66% of students took Algebra II or Integrated Math III. For students who took Algebra II or INT3, 78% were proficient. Of students who took neither of Algebra II and INT3, 40% were proficient.

Action Group II

John Hansen, Chair, Iowa Central Community College
Steve Butler, Iowa State University
Kelly Friesleben, Iowa Department of Education
Olga Sokratova, University of Iowa
Douglas Mupasiri, University of Northern Iowa
Chelsy Doyle, Des Moines Area Community College
Brad Benton, IKM-Manning Community School District
Amanda Matson, Clarke University

Funded by grant: LCAN 23-ICACE-022

Action Group II

Action Group #2: Provide an Effective Transition from High School to College that:

- Involves multiple-measures placement strategies for the first college math course
- Offers opportunities for appropriate college courses or college credit in high school (concurrent enrollment, AP, IB, PSEO, etc.)
- Provides transition courses in high school for college readiness
- Clearly articulates mathematics expectations from colleges and universities

Action Group II

Current Work:

Types of Placement used in Iowa:

Regent Universities: ALEKS PPL (Assessment and Learning in Knowledge Spaces – Preparation and Learning Modules)

Community Colleges: 9 out of 15 community colleges use ALEKS. The others use either Accuplacer, ACT/SAT, or other non-cognitive placement tools.

Private colleges: Most private colleges use either ACT/SAT or HS GPA

ALEKS Cut Scores	ISU	U of I	UNI	Community Colleges
Intro to Statistics	39		55	30-39
Math for Liberal Arts				29-38
Quantitative Reasoning	39	55	45	30-46
Precalculus	51	55	61	35-61
Calculus	76	75	76	65-76

Action Group II

Current Work cont.:

First credit-bearing math course for college students:

- Iowa State University: Calculus I
- University of Iowa: Calculus I *
- University of Northern Iowa: Statistics
- Community Colleges: Statistics
- Private Colleges: varies by student major

Action Group III

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Funded by grant: LCAN 23-ICACE-022

Action Group III Members

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Funded by grant: LCAN 23-ICACE-022

Action Group III

Current Work:

- Identify the mathematics expectations for incoming students to Iowa's institutions of higher education
- Research on different pathways into Iowa's institutions of higher education
- Data on math courses Iowa high school students first take in Iowa colleges
- Outreach to Iowa high schools

Documents

Iowa Higher Education Mathematics Transition Advisory Council

All Math Courses

College mathematics courses **expect** incoming students to have significant prior experiences developing mathematical habits of mind and habits of practice, such as those emphasized in the K-12 Iowa Core Standards of Mathematical Practice.

Math Practices

- Make sense of problems and persevere in solving them
- Reason abstractly and quantitatively
- Construct viable arguments and critique the reasoning of others
- Model with mathematics
- Use appropriate tools strategically
- Attend to precision
- Look for and make use of structure
- Look for and express regularity in repeated reasoning

Summary of Practices

These mathematical practices from the Iowa Core Standards are often summarized as follows:

- Develop critical thinking
- Read and use quantitative arguments with understanding
- Communicate coherently

Summary (continued)

In addition, general expectations for mathematical practice include:

- Exposure to using mathematical quantitative models
- Exposure to and comfort with technology and apps (phones, tablets, computers)

THANK YOU!

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