

Advanced Mathematical Decision Making

An initiative of the Charles A. Dana Center
and the
Texas Association of Supervisors of Mathematics

Pilot Teacher Training
Summer, 2009



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at the University of Texas at Austin



Audience/Purpose

- Rigorous, relevant course to follow Algebra II
- Important math not currently addressed
- Assumes some fluency with Algebra/Geometry
- 4th-year math requirement for non-STEM majors or for workforce training programs
- Elective for calculus-intending students
- Coherent part of PK-12 math program

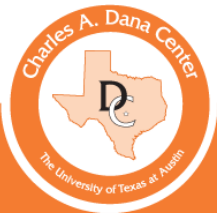


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Proposed Suite of TX H.S. Math Courses

- Algebra I / Geometry / Algebra II
(or Integrated Math I / II / III)
- **Math Models** (Alg. I pre-req; before Alg. II)
- Pre-Calculus (Alg. II pre-req)
- Proposed Course (Alg. II pre-req) :
Advanced Mathematical Decision Making
- AP Calculus (or IB)
- AP Statistics
- Concurrent / dual enrollment

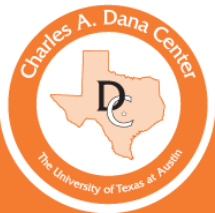


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Philosophy/Approach

- Modeling, reasoning, decision-making throughout
- Range of contexts
- Strong financial strand
- Students communicating and presenting
- Projects, extended problems can be strong element
- Appropriate technology to extend mathematical understanding and allow complex problem solving

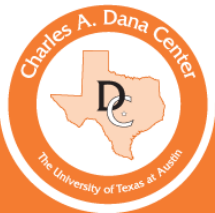


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What you have...

- Frequently Asked Questions (FAQs), including list of course topics
- AMDM Student Information Sheet
- Website: utdanacenter.org/amdm



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Considerations

- Must be a coherent part of district's and state's PK-12 program
- High-quality, comprehensive, coherent instructional materials available free for download (after the pilot year)
- Need long-term, high-quality professional development and training
- Working for State Board approval of AMDM as a state-adopted course...

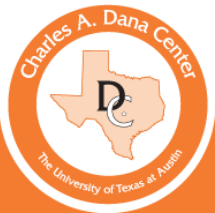


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What the course is NOT

- Remedial
- Computation-focused
- Naked math
(math without outside context)
- Algebra III
- Algebra II louder and slower
- Pre-calculus



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Course Outline

- Analyzing Numerical Data
- Probability
- Analyzing Statistical Studies
- Designing a Statistical Study
- A Discrete Look at Change
- More Continuous Models of Change
- Spatial and Geometric Modeling
- Networks and Graphs
- Decision Making in Finance
- Decision Making in Fair Division/Selection



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Next steps

- Pilot with materials: 2009-2010
- Implementation with materials: 2010-2011
(professional development begins summer 2010)
- Shift to self-sustaining, ongoing implementation and professional development: 2011 or 2012
(Support from ESCs? Universities? Others?)
- Continue policy work for state (SBOE) approval...



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SBOE approval (possible scenario)

- Present the proposed TEKS in March 2009 as discussion in conjunction with the Career and Technology revised TEKS (as a STEM course)
- SBOE can choose to add this course to others being considered for adoption, with potential first reading in May and potential adoption in July
- If adopted, special note that this STEM course can satisfy the fourth-year math requirement
- Additional SBOE action to add to Ch. 74 TAC
- SBOE has been provided reports and updates
- Supervisors can help in informing SBOE members



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Advanced Mathematical Decision Making web site
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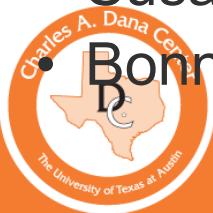


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