

# Course redesign

A Report on Mountwest CTC's Developmental Math  
Redesign Using the Expertise and Guidance of The  
National Council for Academic Transformation  
(NCAT)

<http://www.thencat.org/>

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# Participants

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# Why?

- 💧 high drop-failure-withdraw rates
- 💧 RETENTION issues
- 💧 student complaints
- 💧 lack of consistence instruction
- 💧 difficulty finding qualified adjuncts
- 💧 student performance in subsequent courses

***Insanity: Doing the same thing over and over, expecting different results!***

# What?

- 💧 Developmental Math
  - 💧 Math seems to be the gate-keeper...
  - 💧 Very forward thinking small group of full-time faculty willing to use technology and look at pedagogies
- 💧 Institutional “buy-in”
  - 💧 Started with input from Executive Dean.
  - 💧 Dean of Student Services early in the process.

# NCAT basics

- 💧 "process of redesigning the whole course, rather than individual classes or sections, to achieve better learning outcomes at a lower cost by taking an advantage of technology"
- 💧 Improving success rates AND decreasing costs!

# NCAT Redesign models

supplemental

replacement

emporium

fully online

buffet

linked workshops

# NCAT Emporium Model

- Whole course
- Active Learning
- Interactive software
- Master Learning. Not self-paced
- Increased on-demand, individualized assistance available
- Automate only course components that can benefit from automation (exams, homework, quizzes, etc.)
- Replace single mode of instruction with differentiated instruction

Technology enables good pedagogy with more students

# Spring 2011 Pilot

- ◆ How: three pilot-classes of 42 students in computer lab; traditional had 20 student standard lecture classroom
- ◆ Issues
  - ◆ Two rooms used as one, not ideal for faculty and students.
  - ◆ Culture of student responsibility for own learning (**learning culture slowly developing**).



# Fall 2011 Implementation Plans

- ◆ **15 sections of 20 taught by two full-time faculty**
  - ◆ **Lockwood has 10 sections as load**
  - ◆ **Lilly has 5 sections & a five hour culinary math course as her load**
  - ◆ **Both will be working with students in the Academic Skills Center at appropriate hours.**
  - ◆ **Adding faculty videos to course, special touches and faculty specific teaching (purchased equipment in Spring)**

# Modularization

Modularization- Breaking the material into measurable chunks...

- All students will not need all the same modules, but based on individual student need and/or college level math course needs.
- Students can complete modules at faster pace and move on into college-level mathematics sooner.

## Chapter 3. Introduction to Graphing and Equations of Lines

### Animation



[Plotting Ordered Pairs](#)



[Graphing a Vertical Line](#)



[Graphing Linear Equations](#)



[Mountain Hiking: slope](#)



[Equations in Slope-Intercept Form](#)



[Finding the Slope and y-intercept From the Equation](#)



[Point-Slope Form](#)



[Graphing a Linear Inequality](#)

### PowerPoint



[3.1 The Rectangular Coordinate System and Equations in Two Variables](#)

### Multimedia Textbook



[3.1 The Rectangular Coordinate System and Equations in Two Variables](#)



[3.2 Graphing Equations in Two Variables](#)



[3.3 Slope](#)



[3.4 Slope-Intercept Form of a Line](#)



[3.5 Point-Slope Form of a Line](#)



[3.6 Parallel and Perpendicular Lines](#)



[3.7 Linear Inequalities in Two Variables](#)

### Section Video Lectures



[3.1 The Rectangular Coordinate System and Equations in Two Variables](#)



**Chapter 8: Roots and Radicals**



**Chapter 9: Quadratic Equations**



**Chapter 10: Graphs of Quadratic Equations in Two Variables and an Introduction to Functions**



**Appendix A: Table of Square Roots**

View [Appendix A](#) from your textbook.



**Appendix B: Geometry Review**



**Answers to Selected Exercises**

View the [Answers to Selected Exercises](#) from your textbook.



**Applications Index**

View the [Applications Index](#) from your textbook.



**Subject Index**

View the [Subject Index](#) from your textbook.



## Keys to success

- ◆ Faculty buy-in
- ◆ Administration buy-in
- ◆ Training
- ◆ Technology tool

# Contact Info

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