

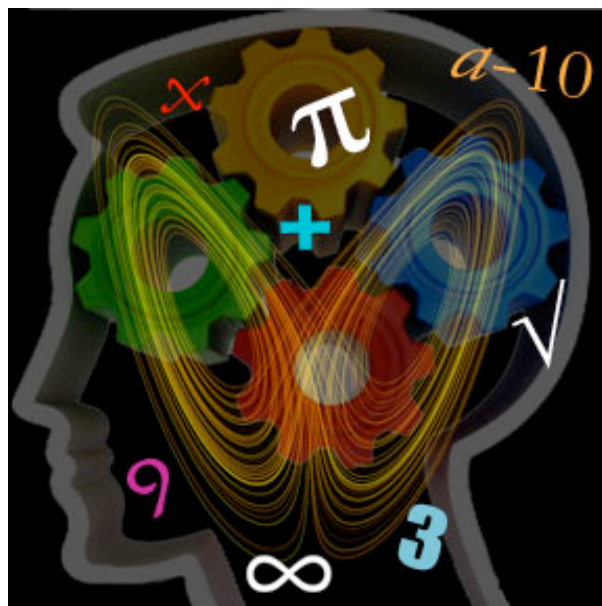
# Mathematical Thinking

CRCRTH 650

Spring 2011

Th. 4:00PM - 6:30PM

Class #4286



This course is intended for graduate students and advanced undergrads (by permission) who want to ENJOY mathematics and EXPERIENCE modes of thinking that attract people to mathematics, and are proven to be effective outside of mathematics.

- *What are the big ideas when studying NUMBERS or SPACE?*
- *What do mathematicians see when they have a glimpse at INFINITY?*
- *How do they contort space, and link it to everyday occurrences?*
- *How do they create order to represent CHAOS?*
- *How do they tame UNCERTAINTY and make DECISION MAKING a science?*

This course will also look at how cognitive psychologists study the acquisition of mathematical ideas and how mathematics educators explore and engage the teaching of mathematics.

In this course you will wrestle with mathematical problem-solving; collaborate with others while conducting thinking experiments; use physical and pictorial models to highlight abstract ideas; argue, defend or dispute mathematical ideas in a nurturing and friendly environment; engage mathematical software to have a glimpse at the new ways of doing mathematics; read, research and write about mathematics and modes of mathematical thinking.

Who should consider taking this course? Anyone who wants to...

- *have FUN doing mathematics*
- *broaden his/her perspective at what mathematics is as a human endeavor*
- *apply mathematical thinking to any other intellectual endeavor*
- *teach mathematics one day at any level*
- *be a mathematically informed counselor or parent*

*Anyone, really!*

*No formal mathematical background beyond high school algebra and geometry is required. For more information contact Fadia Harik at [fadia.harik@umb.edu](mailto:fadia.harik@umb.edu) or Peter Taylor at [peter.taylor@umb.edu](mailto:peter.taylor@umb.edu)*