

<p>MATHEMATICS 420 HISTORY OF MATHEMATICS (3) (EFFECTIVE FALL 2004)</p>

PREREQUISITES: Math 160 or Math 251.

CATALOG DESCRIPTION: Study of the development of mathematics from ancient to modern times through problem solving. The investigation of the lives and works of specific mathematicians with particular attention to the development of ideas, notation, and the influence of mathematics on society.

OBJECTIVES: The student will:

1. Trace the development of Mathematics through the:
 - o Primitive Period
 - o Mesopotamian Era
 - o Egyptian Period
 - o Greek Civilization
 - o Arabic Era
 - o Renaissance
 - o Modern Era
2. Give biographical information about important mathematicians of each period and be able to discuss their contributions to mathematics.
3. Discuss outstanding problems of each period and the quest for solutions.
4. Investigate solutions to some classic problems from each period.
5. Give a definition of Mathematics.
6. Use the library to research articles concerning the history of mathematics.

TEXT: The History of Mathematics an Introduction, 5th Edition, David Burton, McGraw Hill Publishers, ISBN: 0-07-2471409.

OUTLINE:

CHAPTER	TITLE
1	Early Number Systems and Symbols
2	Mathematics in Early Civilizations
3	The Beginnings of Greek Mathematics
4	The Alexandrian School: Euclid
5	The Twilight of Greek Mathematics: Diophantus
6	The First Awakening: Fibonacci
7	The Renaissance of Mathematics: Cardan and Tartaglia
8	The Mechanical World: Descartes and Newton
9	The Development of Probability Theory: Pascal, Bernoulli and Laplace
10	The Revival of Number Theory: Fermat, Euler, Gauss
11	Nineteenth-Century Contributions: Bolyai and Lobachevsky
12	Transition to the Twentieth Century: Cantor and Kronecker
13	Extensions and Generalizations: Hardy, Hausdorff and Noether

Outside readings and a paper or biography are required.