Math 5110 - History of Mathematics - online
Dr. Kimbery Rogers will teach a course on the history of mathematics.
Description: Throughout the semester, students will explore the historical
development of mathematical concepts in algebra, geometry, number theory,
calculus, and probability and statistics, as well as some factors that influenced
the growth of mathematical knowledge across cultures and times. As a result, I see the
course being of potential interest for (a) prospective high school math teachers, (b)
current high school math teachers, and (c) graduate students who may be
considering teaching-focused careers where they could be involved in teaching
courses including the mathematics content listed above. Through their participation
in this course, students will learn about historical information and tasks they could
use in their future teaching, examine how other societies and time periods
considered or developed these topics, deepen their own knowledge of these
content areas through problem solving, and explore some historical figures or topics
of interest through course projects. Prerequisite: Undergraduate linear algebra.

Math 6820 - Topics in Mathematics or Statistics - online
Dr. David Meel will teach a course on Geometric Problems and Misconceptions.
Description: This course will discuss the current vision of school geometry, the
various issues surrounding high school geometry, and the geometrical ideas which
impinge on students understandings of geometrical concepts such as spatial
reasoning and measurement. In particular, this course will focus on the language
surrounding geometry and the inherent ideas which underly geometrical thought
with particular attention to the axiomatic nature of geometry and the use of proof.
The focus will then turn to the various obstacles students face when dealing with
geometrical concepts and teaching techniques useful in overcoming them. We
would examine Van Heiles Levels of Geometric Thinking and Phases of Instruction,
2D versus 3D visualization, building concept definitions, and examining issues
surrounding measurement. Interspersed throughout our discussions will be how
research has driven the development of innovative ways (particularly the use of
technological and non-technological supports such as Geogebra, geoboards,
pattern blocks, attribute blocks, etc.) of presenting the material and how they have
aided students in building understanding of the underlying concepts of geometry.
Additional issues, depending on the students in the course, can be addressed.
Prerequisite: Significant undergraduate coursework in mathematics.