

Spring 2020 Online Course Offering ~ WIU ~ Math 406(G) Problem Solving and the History of Mathematics

Course Description

Various problems, their solutions, related mathematical concepts and their historical significance are analyzed through investigation of classic problems and their connection to middle school mathematics. Contributions by Archimedes, Descartes, Eratosthenes, Euler, Gauss, Pascal, Pythagoras and others are studied.

Topics to be covered in Math 406 include:

- Bridges of Königsberg
- Platonic solids
- Descartes and The Quadratic Formula
- Functions
- Gauss, sums, and arithmetic sequences
- Brahmagupta and 'discovery' of zero
- The Pythagorean Theorem and Pythagorean Triples
- Pascal's Triangle
- Radians, Eratosthenes and Circumference of the Earth
- Archimedes Calculation of the Area of a Circle



Course Details:

Course title:

Problem Solving and the History of Mathematics

Course number: Math 406(G). 'G' means this course can be taken for graduate credit.

Instructor: Dr. Bob Mann **STAR Number:** 54056

Day/Time: This is an online course. As a general rule, course materials, readings, discussion topics, and assignments for the week will be posted regularly each week. Each week participants will engage with the materials and discussions on their own (asynchronously). Assignments will be due throughout the semester.

Location: online using WesternOnline <https://westernonline.wiu.edu/>

(Log in with your ecom username and password.)

Credit hours: 3 SH

Textbook: *Math Through the Ages: A Gentle History for Teachers and Others*, Expanded Second Edition, by W. P. Berlinghoff and F.Q. Goevea, Hardcover, 2015, MAA and Oxton House Publishers.

(ISBN: 978-1-93951-212-3)

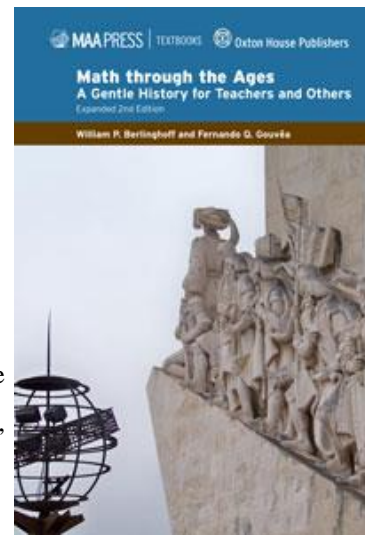
Intended audiences: This course is intended for (a) undergraduate students in the Middle Level Education majors in the Middle Level Mathematics Teaching minor, (b) graduate students seeking a masters degree in education or in teaching mathematics, and (c) in-service teachers seeking professional development.

University: Western Illinois University

Pre-requisite: MATH 123 or 128 or 502 or equivalent.

Instructor: Bob Mann

Instructor's Phone: 309/298-2037 and **email:** rr-mann@wiu.edu



Instructor Comments

This is a math course, but also a "math across the curriculum" course. In this course we will be reading, writing, doing math, and solving problems. While it is not a teaching methods course, it is a mathematics education course. One purpose of this course is to connect mathematics with math history and world history. This is particularly useful for middle school teachers who use interdisciplinary approaches and want to integrate reading, social studies, writing, and mathematics but it should also be useful to all teachers of mathematics and the course should provide new connections and new perspectives to share in many classrooms.

To Enroll

Email (rr-mann@wiu.edu) or call (309-298-2037) me, Bob Mann if you are interested in taking this course. (You may also call or write if you just have a question ;-) You'll need to provide your WIU ID number. I will forward your name and WIU ID number to our department secretary who will enroll you. You should check the STARS system a couple days later to confirm you are enrolled in the course.

Graduate Program at WIU

The WIU Curriculum and Instruction Department has an excellent [Master of Science in Elementary Education](#) degree program. It has a number of Areas of Specialization, including [Math Education](#) and [Elementary Curriculum](#). This Math 406G course can work in these areas of specialization. This degree program is an [award-winning program](#) (WIU-news).

MSTM: The WIU mathematics department will also soon be offering a **Masters of Science in Teaching Mathematics(MSTM)** degree and this course will count toward that program as well.

More information on this program can be found at <http://mstmatwiu.pbworks.com/>

Graduate School and Costs

For information on our Graduate School and costs, see wiu.edu/vpas/business_services/tuition/ or wiu.edu/vpas/business_services/tuition/graduate_non-degree/planQ.php. For specific questions about costs contact the School of Graduate Studies; Sherman Hall 116; Macomb, IL 61455 (877-WIU Grad or 309-298-1806) Email: Grad-Office@wiu.edu.

Current costs are roughly \$340 per credit hour for an online graduate course.

Graduate School Application: If you need to apply to the WIU graduate school, click here http://www.wiu.edu/admissions/apply_now/