MATH. 4513, SPRING 2023,
TTH 9:00-10:15 PM, 356 PHSC

Instructor: Tomasz Przebinda, Room 524, PHSC; home page:
http://tomasz.przebinda.com/; e-mail: tprzebinda at gmail.com;

Office hours: Any time via a zoom by appointment.

Text: We shall use several sources, which I'm going to provide during the course.

Course outline: We shall brows through several applications of mathematics to other disciplines. Each of them will be a separate unit consisting of my lectures, student presentations and a description of the results assigned as a homework. The possible topics (not necessarily in this order) are:

Eratosthenes computation of the radius of the Earth;
Platonic solids, limiting the possible tilings of the sphere by regular n-gons;
RSA crypto-system;
Huffman coding;
Dijkstra algorithm (the shortest path problem);
Magnetic Resonance Imaging;
Solving heat equation on a disc;
Numerical integration on the sphere via automorphic forms;
How many times a lie needs to be repeated so "it becomes a truth"?

Final grade will be based on the written work assigned during the course.

Students with Disabilities: Any student having a disability that may interfere with the demonstration of his or her abilities should contact me as soon as possible to arrange accommodations necessary to ensure full participation in the course.

Grade of Incomplete: The grade of "I" is a special-purpose grade given when a specific task needs to be completed to finish the course work. This is typically a term paper or other special assignment, so rarely makes sense in a mathematics course. An "I" cannot be given to avoid a low grade in cases where the course work is not strong.