



ART 389/MATH 467: Math and Art in Relation

Course Description: *Art and Math in Relation* will examine art and mathematics from the perspective of ideas which are common but variously interpreted by both disciplines, linked by a central theme of visual study. The course will also examine the uses each disciplines makes of the other. It will be half studio art, half upper level mathematics, suitable for motivated students with advanced coursework in either studio art or mathematics, but not necessarily both.

Self-reference: fractals, fixed points, incompleteness

Tiling: tessellation, aperiodic tilings, artistic tilings

Algorithms: the Halting Problem, Max flow/min cut theorem, SPURSE

Iteration: the higher infinite, the Menger sponge and Sierpinski triangle

Geometry: geometry on sphere and hyperbolic planes, golden ratio, Fibonacci sequence

Performance: proof, communication, performance art

Beauty: elegance of proof, “Proofs from the Book” by Aigner and Ziegler, relevance of beauty in art

Instructors: Professor Corinne Diop (Art), diopcj@jmu.edu, Duke 221; office hours tba, and by appointment.

Dr. Elizabeth Brown (Mathematics), brownet@math.jmu.edu, Roop 119; office hours tba, and by appointment.

Class Meetings: tba, in the IVS classroom, Roop 211.

Grading: Grades in this class will be based on topical art assignments (30%), mathematical problem sets (30%), and a large final project that will combine artistic expression with mathematical exposition (40%). Given the unique nature of the course, engagement is paramount. Classroom participation may affect a grade by up to 10% in either direction. (In other words, asking good questions will help your grade. Boorish behaviour that interferes with other students' learning will hurt it.)

Special Circumstances: Any student with a physical, learning, psychiatric or religious condition that requires special arrangements should speak with one of us as soon as possible so that we can arrange an appropriate accommodation. Please see one of us by the second week of class; we cannot help if we do not know what is needed.

Honor Code: Students are expected to conform to the JMU academic conduct code. Standing procedures will be implemented in cases of possible infraction. In this course, collaboration on problem sets is encouraged and permitted. Copying is not.