

Mathematics in recent art. Some mathematical objects have been turned into art themselves. Dalis The Crucifixion is subtitled Corpus Hupercubicus. In it he has Christ crucified not on a cross, but on a two dimensional image of an unfolded four dimensional hypercube. What is a hypercube? Fractals are one example of math becoming art in its own right. Studies have even been done on Jackson Pollacks paintings that determine the fractal dimension of Pollacks paintings and demonstrating a strong correlation of this dimension to aesthetic rankings of the paintings formed by polling the public.

Soap bubbles form mathematically sophisticated shapes called minimal surfaces. Sculptors have tried to capture the elegance of such surfaces in various forms. Finally, award winning artist Helaman Ferguson, a contemporary sculptor has created what he calls theorems in stone in which his sculptures serve the dual purposes of art and demonstrating proof of a mathematical theorem.

Mathematics in Music: at the end of the course we will explore mathematical themes in music. Again the field is rich. The rhythm and the beat are mathematical structures. We will use mathematics to compose music of our own. Other concepts that we will explore that blend mathematics and music include harmonic motion, vibrating strings, damped harmonic motion, the wave equation for strings, consonance and dissonance, scales, Fourier transforms, amplitude and frequency modulation, and of course, the elementary question what is sound? We will see themes reappear here, such as the Fibonacci numbers.

This course counts for a divisional credit in mathematics. No mathematical background is necessary. Another version will be available for more advanced mathematical students (such as math majors, math minors, and cs majors).

Application: The application is due September 30, 2004. All applicants will also schedule a short interview with Professor Howards. The application is available through my web sight listed above.

Contacting Professor Howards: To contact professor howards please call him at x5352 or send him an email at his email address listed above. If you do send an email please use "Venice" as the first word in the subject line so that I will be certain to get it even if the spam filter tries to delete it! I hope you will apply!!!!