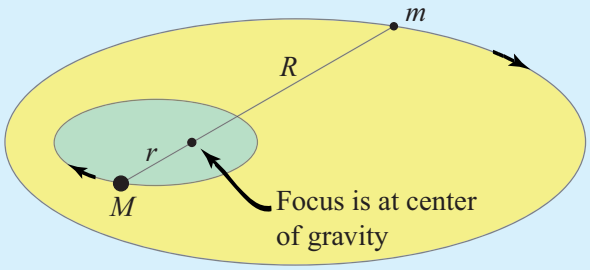


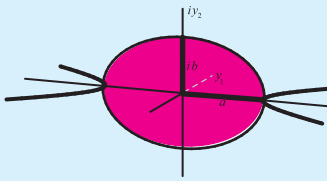
This picture shows how any planet orbits around a massive body such as the sun or some other star. It also tells us how a smaller satellite, such as a moon, orbits around its planet.

A little-known fact: If you release a bunch of photons at one focus of an ellipse, the wave reflects off the ellipse, repeatedly going from one focus to other. BUT . . . they don't remain a wave, but instead converge to a particle! An applet in CONICS demonstrates this.

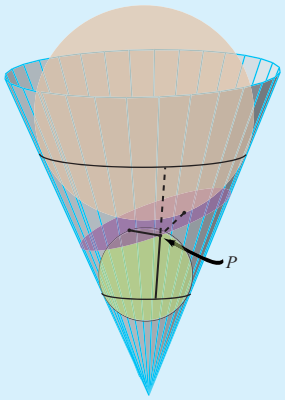
Mth 593/493
A Special Course on Conics

Conic Sections represent the one of the oldest and most important areas of mathematics. It is a subject that any math or science eventually encounters. Professor Kendig's new book Conics "does it right" by eliminating exceptions and creating a unified approach that will forever change the way you look at ellipses, hyperbolas and parabolas. You will journey into the fourth dimension to see aspects of conic sections that are hidden from everyday view, and this will make the whole subject more exciting and engaging. Software programs in Maple, Cabri, and 36 conics applets supplied as a disk with the book afford the student a hands-on approach and will help make the study both concrete and rewarding.

Here's a 3-d slice of the fourth dimension showing the usually hidden ellipse that always spans the gap between the two branches of any hyperbola. The ellipse has pure imaginary area and is given by a very simple formula.



Here's a picture that accompanies the "ice cream cone" theorem. The theorem says that the two spheres touch the ellipse at its two foci. The proof turns out to be quite simple.



This cube represents a "projective view" of conics. When you learn how to read this picture, you'll see ellipses as well as hyperbolas, major and minor axes, asymptotes and even points at infinity. Many basic geometric features of conics are contained in this one picture.