

- The project should produce computer generated images and/or animations relevant to the properties of parametric curves studied so far in this class. It is necessary that the project be such that it engages students in the connection between equations and images.
- Maple and Mathematica are suitable software for this. Other software may be acceptable if it
  - \* Allows direct input of equations/formulas that may be manipulated
  - \* Create visual images and animations from these equations

Animation software that is manipulated with a user interface that does not permit equations to be manipulated is not acceptable.

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- A project that shows one or more topics studied in the class for a variety of different curves.
    - \* Illustrations may show quantities using color, thickness/texture, stationary vectors, moving vectors, related curves.
    - \* Curve types may include Bezier curves, rational Bezier Curves, involutes, evolutes, cycloids, spirals, or any other type of the hundreds of curves that have been studied.
  - A project that shows how the topics studied in the class can be used to illustrate a phenomenon or principal from a field such as physics, biology, or any other subject where parametric curves might arise.
  - A project that seeks to create a visually interesting animation using the topics studied in this class. The animations do not necessarily have to respect the laws of physics. For example,
    - \* Curves might move in relation to one another in interesting ways.
    - \* The Frenet Frame provides a way to move an object along an arc, while keeping its position oriented to the arc. The position of the object can be varied relative to the Frenet Frame. (For example, a 3-D stick figure may be given exaggerated or unexpected motions in flight.)