

## E128 Project Spring Semester 2008

The project for E128 this semester is to create an animation of the assembly and operation of a moderately complex mechanical device. The device may be of your choice, however it must be approved by the instructor. The device must be composed of several mechanical components, and be constructed of different materials or material finishes. Additionally, the animation must specifically illustrate the principles of operation and aspects of the device's operation that are difficult to visualize or understand conceptually. Examples include: airflow, magnetic field, fluid flow, microscopic material properties, etc.

Proposals must include the names of the group members and a short paragraph describing the device, its operation, and its assembly. Proposals will be due in one week.

The project is to be done in a groups of three students. You may form your own groups, or the instructor will assign people to groups. 80% of the project grade will be a common score for the group. The remaining 20% of the project grade will be assigned by peer evaluation of the group members among themselves.

The animation must include the equivalent of 40 seconds of video animation per person, minimum. At a rate of 15 frames per second, this is at least 600 frames per person. The minimum resolution must be 640x480. The animation must demonstrate the 3-dimensional assembly and operation of the device. The animation must include 3-dimensional motion of the camera and lights. A sound track with music is also required. The project will be graded on the following criteria.

- Effective use of solid and surface modeling to present mechanical objects.
- Effective use of rendering techniques to emphasize depth and dimension.
- Effective use of colors and surface properties to represent materials and surface qualities.
- Effective use of lighting to present the device and to highlight its key features.
- Effective use of animation to present the assembly and operation of the device.
- Effective presentation of visually and conceptually difficult aspects of the device.
- Effective use of camera motion to view the device from different viewpoints.
- Overall organization and clarity of the animation.
- Overall quality of the animation and graphics.
- Effective use of the soundtrack and music.
- Purposed creativity in the presentation and animation.

There is no written report requirement. In lieu of a final exam there is a required demonstration period when your group will present the final animation to rest of the class, and any other interested parties. The final model and animation files must be submitted in the form of a CD. The required file format is Windows Video (.avi or .wmv)

This project is worth 40% of your course grade.

# E128 Project Grade Sheet

Spring Semester 2008

- \_\_\_\_\_ Accuracy of solid and surface modeling to present mechanical objects. (20)
- \_\_\_\_\_ Effective use of colors and surface properties to represent materials and surfaces. (10)
- \_\_\_\_\_ Effective use of lighting to present the device and to highlight its key features. (5)
- \_\_\_\_\_ Effective use of animation to present the assembly and operation of the device. (10)
- \_\_\_\_\_ Effective presentation of visually and conceptually difficult aspects of the device. (10)
- \_\_\_\_\_ Effective use of camera motion to view the device from different viewpoints. (5)
- \_\_\_\_\_ Effective use of music and sound. (5)
- \_\_\_\_\_ Overall organization, quality, and clarity of the animation and graphics. (5)
- \_\_\_\_\_ Purposed creativity in the presentation and animation. (10)
  
- \_\_\_\_\_ Project common subtotal. (80)

Team Members:	Contribution (20)	Total Project (100)
_____	_____	_____
_____	_____	_____
_____	_____	_____

> 90 points = A

> 80 points = B

> 70 points = C