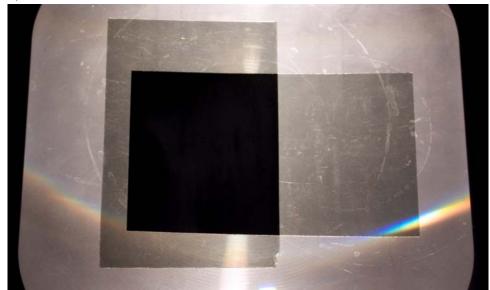
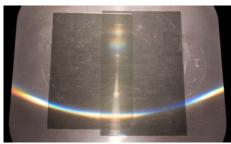
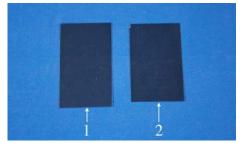
Optics Polarization Dichroic Polarization







## Concept:

When unpolarized light of intensity  $I_0$  passes thru a linear polarizer whose transmission axis is oriented at an angle  $\theta$  relative to the transmission axis of a second linear polarizer, the transmitted intensity, I, is given by

$$I = I_0 \cos^2 \theta$$
. (Malus's Law)

As the second polarizer is rotated, the transmitted intensity varies according to Malus's Law given above. Note that as  $\theta \to 90^{\circ}$ ,  $I \to 0$ .

## **Equipment:**

- 1. Linearly Polarized Filter
- 2. Linearly Polarized Filter
- 3. Overhead Projector (not shown). Must be transmission type overhead, as a reflection type overhead produces polarized light.

## Procedure:

- 1. Place both filters parallel to each other on the overheard projector.
- 2. Overlap the filters.
- 3. Notice that polarized light is transmitted through each filter as well as through the combination of filters.
- 4. Rotate one filter 90 degrees.
- 5. Notice that the light is not transmitted through the combination of the two filters.