

ETGG4803

Lab2: **Flocking**

Grade Points: **40**

Assigned: **8/29/2017**

Due: **Batch #1** (10/2/2017 @ end of class)

Possible Points: **62**

### Tasks:

1. **(10 points)** Represent a boid as we did in lecture and draw to screen. Visually show orientation. Make sure it's movement is force-based.
2. **(10 points)** Make obstacles
3. **(20 points)** Make a Flock, a container of boids. Generate steering impulses here (or pass location of other flock-mates to the boid). The behavior I'm looking for:
  - a. Don't allow the boid to move into an obstacle (raw adjustment of position)
  - b. Move towards mouse if the user is clicking (but still allow some movement for the cohesion, separation and alignment impulses)
  - c. If the user is not clicking, do a combination of separation, cohesion and alignment.
4. **(7 points)** Implement a cone-based vision detection algorithm using dot-product!
5. **(15 points)** Make the boid actively avoid steering into an obstacle.