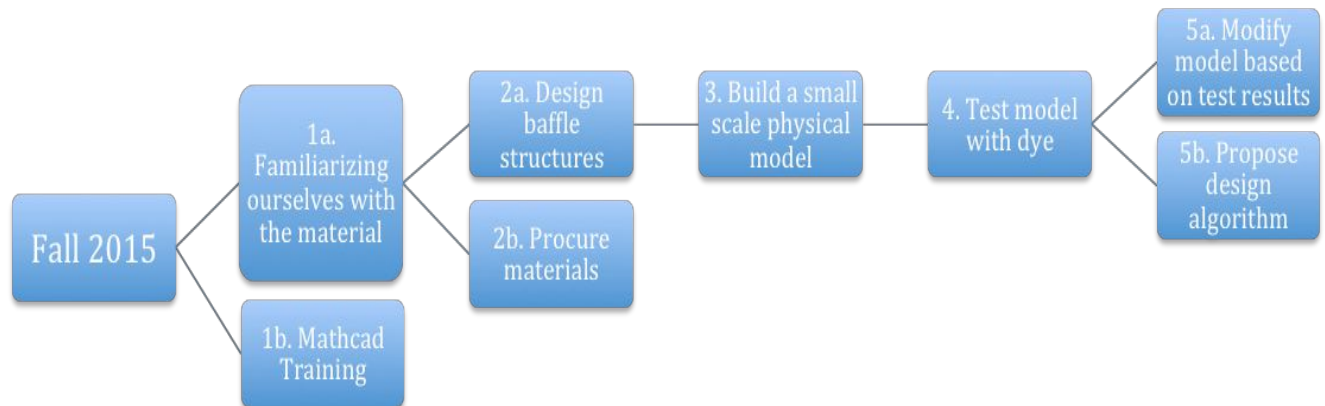# Flocculator Efficiency, Fall 2015

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Task Map

Detailed Task List

1a. Finish familiarizing ourselves with the flocculator material: September 2nd - September 16th, 2015 (Flora)
(Goal: To understand team challenges for Fall 2015)
- Going through Monroe's slides
- Reading previous reports
- Reviewing fluid mechanics
- Meet with Monroe and talk about our understanding on September 16th (3:40 - 4:10 PM)

1b. Mathcad Training: September 9th - September 23rd, 2015 (Mallika)
(Goal: To be able to use MathCAD in our design algorithm)
- Use the MathCAD resources available on AguaClara website
  (https://confluence.cornell.edu/display/cee4540/Design+Challenges+15).

2a. Design baffles structures to increase turbulence and utilize water gathered above the lower baffles more efficiently: September 23 - 14th October, 2015 (Tanvi)
- Use our understanding of flocculation theory to design baffles/ some other structure to reduce dead zones and/or reduce head loss
- Make sketches and decide on measurements.

2b. Procuring Materials: October 14th - October 21st, 2015 (Flora)
- Make a list of required materials and quantities
- Order/find materials necessary for the small scale model with Christina (cpf45@cornell.edu)
- Symposium: October 19th & 21st 2015

3. Build a small-scale physical model: October 21st - October 28th, 2015 (Mallika)
- Bring our plans to life!
- Meet with Monroe and talk about our design and model on October 26th (5:30 - 6 PM)

4. Run trials to determine if the design improves flocculator efficiency: October 29th - November 12th, 2015 (Tanvi)
- Test the model with red dye to visualize flow
- Observe if dead zones and eliminated
- Find a way to quantify turbulence
- Perhaps use clay solution, settling tube and turbidimeter to test turbidity of end result.

5a. Modify model based on test results: November 13th - November 24th, 2015 (Flora)
- Use results of the test to plan structural changes to the model to improve efficiency
- Physically implement the changes in design

5b. Propose a design algorithm: November 30th - End of the semester (Mallika)
- Use the observations from our tests before and after modifications to create a mathematical model that would be helpful in applying our findings to the full-scale plants
- Present finding through research report and Final Symposiums

Team Roles

Mallika: Team Coordinator
- The Team Coordinator will ensure that the team is sticking to our timeline and submitting deliverables in a timely manner. In addition, she will facilitate discussion and meetings.

Flora: Materials Coordinator

- The Materials Coordinator will oversee the acquisition of materials for experiments and building the flocculator model. She will also keep a list of materials required/ acquired and specifications.

Tanvi: Data Coordinator
- The Data Coordinator will ensure that data from experiments is saved in the appropriate place, accessible to all team members and informatively labelled. She will also go through data prior to meetings to get analysis started.