

# Flocculator and Sedimentation Optimization

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## Detailed Task List Spring 2012

1. Design system by 2-22-12
  - (a) Design the physical system via flow chart to meet specified abilities. Our system should be able to: (by 2-12-12)
    - i. Automatically adjust and maintain accurate turbidity
    - ii. Automatically vary flocculator length
    - iii. Automatically vary capture velocity
    - iv. Automatically vary upflow velocity
    - v. Build a floc blanket
    - vi. Adjust the height of the floc hopper
    - vii. Recycle flocs efficiently
    - viii. Automatically adjust the floc recycle flow rate
  - (b) Identify constraints and concerns in experimental setup (by 2-13-12)
  - (c) Perform computational analysis to detail system components and operating conditions (by 2-16-12)
  - (d) Assemble list of parts required for setup (by 2-19-12)
    - i. Inventory current stock of equipment
    - ii. Acquire needed equipment
  - (e) Design order and method of experimentation (by 2-22-12)
  - (f) Do an approximate cost analysis of flocculator, sedimentation tank and filter (first draft by 2-22-12)
2. Fabricate System by 3-2-12
  - (a) Simplify current setup as necessary to achieve a clean and professional work area
  - (b) Build system and concurrently write a pseudo code for process controller
  - (c) Test components individually and in groups

3. Code and test Process Controller by 3-9-12
  - (a) Implement pseudo code
4. Prepare Data Acquisition system by 3-13-12
  - (a) Evaluate prior data acquisition tools (Meta file), adapt if necessary
5. Start experimenting! start by 3-15-12
6. Collect and Analyze Data
7. Repeat above steps as necessary
8. Deliver Final Report on 5-4-12