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This semester, I am on the Linear Chemical Dose Controller Team. The main idea of the Linear Chemical Dose Controller(LCDC) is to have one device, the LCDC, to dose three chemicals at different locations in the plant. Two of the coagulant doses will be applied in the entrance tank. The third dose, chlorine, will be applied after filtration.

After creating a working LCDC, we wanted to test it to maximum flow and minimize percent error to no more than ten percent. In order to achieve these standards calibration must occur. We tried different methods to effectively calibrate the system such as changing the height of the constant head tank (CHT), cutting the dosing tube, and sometimes even changing the location (distance away from the LCDC) of the CHT. These different techniques lead to smaller total percent errors in expected flow vs actual flow which is detailed in our report. This was our major concern for this semester; calibration and reducing error.

Some of our other goals for this semester were to create a parts list and fabrication/calibration guide for the LCDC for the operator. We created a manual, with pictures, so that it would be easy to understand and replicate. The majority of what we did this semester is detailed in the manual so that our steps can be followed the system can be fabricated and calibrated. Hopefully this manual and parts list will allow the operator to make smart variations if a design constraint comes along. There are also videos on [youtube](#) to walk you through the fabrication of the Triple Doser.