

**Florida International University
Department of Civil and Environmental Engineering**

Semester Project

Optimization in Water Resources Engineering, Spring 2020

Instructor: Arturo S. Leon, Ph.D., P.E., D.WRE

The semester project is individual and the topic will be selected by each student. Some topic examples are:

1. Optimization of hydropower operation
2. Optimization of flood control management
3. Optimization of pumping station operation
4. Optimal design of hydraulic structures
5. Optimal operation of a multi-objective and multi-reservoir system
6. Optimal design or operation of a water distribution system
7. Optimal operation of a stormwater conveyance system

The student can use the data presented in class or use his/her own data. The report should compare at least two types of optimization methods and include a clear discussion on the selection of the methods. The report will include the definition of the objective function and constraints. The report will also present a sensitivity analysis, a discussion on the accuracy of the results and display multiple plots supporting the analysis. The document you produce should have the standard of a professional report.

Due date: The due date of the semester project will be April 15, 2020, in class. On this day, each student will make a presentation of his/her project.