

NAME: _____

Module 10
CE 378 Water Resources Engineering
TAKE- HOME EXAM (Due to me by the last hour of the scheduled final period)
OPEN BOOK, BUT WORK ALONE

Design a minor storm drainage system for your home neighborhood. Be as complete as possible and make and justify any needed assumptions. Show all work, including maps, data and design tables and appropriate drawings. Refer to the class presentations, supplemental material, and the book for appropriate assumptions and methods. Use the “10-yr” Tuscaloosa (type III) rain file on the web site, which is a 4.53 inch cumulative rain file having 5 minute increments, for the design storm conditions (if this is not an appropriate level of service for your area, you can import this file into Excel and multiply each rain increment to correspond to the new rain depth, saving the file appropriately). Use SWMM5 for the design, and explore some of the added features available in the model after you have a successful model run and final design. Compare at least a portion of the design using the Rational Method, as described in class. Make sure you state the limitations of the design method used and compare your site to those conditions.

The following lists the grading criteria:

10 page limit (5)	
Report organization, summaries and figures (5)	
Comments/conclusions (15)	
Soil and infiltration factors, system layout, maps, and drainage area description (15)	
Appurtenances (manhole spacing, design and selection of inlets, etc.) (5)	
Correct tc calculations (“watershed width”) and correct use of rainfall data (10)	
Use of extra modeling options (10)	
Check for velocities and stated requirements (10)	
Profiles (10)	
Compare portion of design using Rational Method, and discuss (15)	

(**mandatory**, otherwise, you will receive an incomplete for the class grade): **ALSO**, turn in copies of your class portfolio along with your final (keep originals yourself). These will be available for pickup (along with the finals), starting about a week after the final, near my office door. They will be brought to the CE main office mail room, after summer classes start.