

Three Rivers Community College

Water Resources –Lab –ENV K 245L

Fall 2017

B 107; Lab W 2:46 – 4:26

Instructor; Donald W. Gerwick, P.E., L.S.
Office: B 107 Office Hours: M 12:00 – 1:15
Additional Times by Appointment

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Text: **Hydraulic Analysis and Design**, 4th edition; McCuen, Richard H.
Portions of the text will be utilized and will be augmented with additional materials as listed.

Additional Materials which may be obtained “on line” are listed with their internet addresses; 2004 Connecticut Stormwater Quality Manual (www.ct.gov/dep/stormwater).

The course content is designed for civil and environmental students to introduce a variety of aspects of Water Resources and Storm Water Management. Starting with the Hydraulic Cycle to study concepts of rainfall the course progresses to storm water run off and hydraulic design. Two principal methods of determining Stormwater run off will be introduced; the Rational Method which is the historic method for small drainage basins and the TR-55 developed by the USDA Soil Conservation Service used for more complex basins. The majority of the time will be spent on the latter TR-55 methodology. A number of design problems such as gutter flow analysis, culvert analysis, weirs and orifices will also be explored. In addition students will be introduced to water quality concepts and practices as a part of emerging technologies. Labs for this course are designed to assist students gain “hands on” experience with a number of concepts and methodologies.

Unless otherwise discussed in Lab, each week’s lab report will be due at the beginning of the following lab session. In case of an unscheduled school closing or disruption, the lab may be turned in at the beginning of the next regular scheduled class or lab without penalty for being late. Most labs will be concluded in a single lab period although one or two may run longer. The group projects and presentations will take two lab periods.

Handouts for Labs. A digital copy will be sent to your TRCC email address listed in the instructors official student list. No other email address will be used. It is the students obligation to make sure that they know their TRCC email address and to check it. A hard copy of the lab (although not necessarily any additional handouts) will be distributed at the beginning of the lab. Students are expected to read their digital copy and be familiar with the lab prior to the Lab. All labs require a written report consistent the instructions for lab formats that will be distributed with the first lab. Special Reports may have additional requirements. Once the labs have been distributed it is the students' sole responsibility to follow formats and instructions for the labs and the lab reports.

1. Precipitation
2. Topography Part 1
3. Topography Part 2
4. Drainage Basins
5. Time of Concentration
6. Channel Flow
7. Graphical Peak Discharge
8. Gutter/Shallow Flow
9. Weirs & Orifices
10. Culvert Design
11. Water Quality
12. Permeability
13. Water Resource Group Project & Presentations – Information on this will be given to students at roughly the third week of classes. Students will work in small groups to research and/or conduct experiments on an aspect of Water Resources.

The following resources are either free on line professional journals or public domain documents available digitally on line

www.stormh2o.com
www.erosioncontrol.com

CT DEP 2004 Stormwater Quality Manual – to find, Google - CT DEP stormwater manual; click on DEP Stormwater Manual and click on “complete manual” or individual chapters on line;

Or go to www.ct.gov/dep. Once in the DEEP site use the internal search for “stormwater quality” which should take you to a page the attached page.

Note – Connecticut Department of Environmental Protect (DEP) is now the CT Department of Energy and Environmental Protection (DEEP) however older documents were published under DEP and may, or may not, have had their titles revised.

Lab Grades – Individual labs will be assigned a numeric value; the students grade for that lab will be based on the number of points earned, based on the level of completeness, quality, and the appropriateness of results of the report. Students may get partial credit for a paper based substitution. It is the students sole responsibility to make arrangements with the instructor to make up any and all work. Missing lab or other work will receive a “0” grade, unless arrangements have been made with the instructor. Labs that are turned in late will have points deducted from the lab grade. In the event of a student being absent the date a lab is due, they may email a digital copy of the lab to verify that it has been completed, but must still turn in a “hard” copy upon their return.

Final Grade – The students final grade will be based on the weighted average of all completed labs during the semester. Missed labs that require experimentation generally cannot be made up.

Class Attendance is expected, although, while students will not be penalized for non-attendance (with the exception as noted above for labs) they will be responsible for material covered in their absence. It will be the student’s responsibility to determine what assignments that may have been missed.

Class Room Policies - Cell phones brought to class shall be off and out of site (no texting). Language and behavior that is disrespectful, or disruptive, to others is unacceptable; Students should refer to their Student Handbook for examples of such behavior as well additional school policies.

Academic Integrity – Unless indicated by specific assignments, by the instructor, for group projects, all work for assignments shall be that of the individual student. Cheating on quizzes or using the work of others without proper credit (plagiarism) for assignments, or other forms of academic dishonesty, as defined by the Student Handbook, is unacceptable. If, after evaluation of the potential infraction(s), consistent with the Student Handbook, a grade of “0” for the assignment may be assigned.

Disabilities – If you have a visible or hidden disability that may require classroom or test taking modifications you are encouraged to contact Student Services for assessment.

Digication

All students are required to maintain an online learning portfolio in Digication that uses the college template. Through this electronic tool students will have the opportunity to monitor their own growth in college-wide learning. The student will keep his/her learning portfolio and may continue to use the Digication account after graduation. A Three Rivers General Education Assessment Team will select and review random works to improve the college experience for all. Student work reviewed for assessment purposes will not include names and all student work will remain private and anonymous for college improvement purposes. Students will have the ability to integrate learning from the classroom, college, and life in general, which will provide additional learning opportunities. If desired, students will have the option to create multiple portfolios.