

Tennessee Technological University
Department of Civil & Environmental Engineering
CEE 6900 – Special Stormwater Management: Design and Applications

2017 Catalog Data: CEE 6900

Required Textbook: (*Suggested Book*) Thomas N. Debo and Andrew Reese: Municipal Stormwater Management Second Edition, November 25, 2002 by CRC Press.

Faculty Coordinator: Dr. Tania Datta and Dr. Alfred Kalyanapu

Participating Faculty: Dr. Lenly Weathers and Dr. David Huddleston

Prerequisites: Hydraulics, CEE 3420
Engineering Hydrology, CEE 4420/5420
CEE 3413 Environmental Engineering,
Consent of Instructor

Goal: To equip students with fundamental and practical knowledge, as well as an understanding on the hands-on working tools utilized in stormwater management planning and design. Through this course, students will learn why and how improper stormwater management causes hydrologic and ecosystem disbalance, develop fundamental concepts supporting the design and modeling of stormwater best management practices and relate that to the current regulatory environment for stormwater

Course learning objectives:

1. Understand the stormwater regulations and policies in the US, and that of the State of Tennessee.
2. Understand the impacts of stormwater runoff on downstream hydrology, ecosystems and the economy.
3. Understand the principles of non-structural and structural best management practices for stormwater management
4. Design and analyze stormwater management practices.
5. Use state-of-the-practice stormwater modeling solutions.

Major Topics Covered:

1. History and Evolution of Stormwater Regulations in US
2. Impact of Stormwater on Urban Aquatic Ecosystems
3. Stormwater Best Management Practices: Design and Application
4. Stormwater Sampling and Water Quality Analysis
5. Stormwater Management Modeling using EPA SWMM

Measurable outcomes:

The students will be expected to:

1. Communicate the complexities of regulations and policies with stormwater management in US and in Tennessee;
2. Demonstrate a knowledge of existing literature on the impact of stormwater on hydrology and ecology;
3. Differentiate between structural and non-structural best management practices;
4. Design various best management practices for effective stormwater management;
5. Familiarize with the various steps involved with modeling a robust stormwater management plan
6. Demonstrate skills with stormwater sampling and analyses techniques.
7. Demonstrate skills in using EPA SWMM system.