

CEE 4803G Syllabus

Stormwater Management, 3 Credits

Spring 2027

Instructor Information

Instructor: Joe D. Manous, Jr., PhD, PE, BC.WRE

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General Course Information

Description

This course provides engineering students with a rigorous, design-focused introduction to stormwater hydrology, hydraulics, and urban stormwater management. Emphasis is placed on rainfall–runoff processes, hydrologic modeling, open-channel and closed-conduit hydraulics, stormwater conveyance design, green infrastructure/low-impact development (LID), and compliance with Georgia stormwater regulations.

Course Learning Outcomes

Upon successful completion of this course, students should be able to:

- Quantify precipitation, infiltration, and runoff processes using engineering hydrologic tools. *ABET Outcome 1 – Solve complex engineering problems utilizing principles of engineering, science, and mathematics.*
- Apply fluid mechanics principles to channels, storm sewers, culverts, and hydraulic structures. *ABET Outcome 1 – Solve complex engineering problems utilizing principles of engineering, science, and mathematics.*
- Design stormwater conveyance systems using GSMM methodology. *ABET Outcome 2 – Apply engineering design to produce solutions that meet specified needs; ABET Outcome 6 – Develop and conduct appropriate experimentation and use engineering judgment.*
- Develop modeling tools (HEC-HMS, SWMM) for watershed and system simulation. *ABET Outcome 6 – Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment.*
- Design detention/retention systems and LID/green infrastructure controls. *ABET Outcome 2 – Apply engineering design to produce solutions that meet specified needs.*

- Evaluate permitting and regulatory requirements (NPDES MS4, TMDLs, GSMM) to support engineering judgment and design decisions. *ABET Outcome 4 – Recognize ethical and professional responsibilities; ABET Outcome 2 – Apply engineering design to produce solutions that meet specified needs.*
- Communicate stormwater engineering solutions in professional written and oral form. *ABET Outcome 3 – Communicate effectively with a range of audiences.*

Required Course Materials

Sturm, Terry W., Open Channel Hydraulics, McGraw-Hill.

Prerequisite: CEE 3040 – Fluid Mechanics.

Grading Policy

Grades are rounded to the nearest integer number. Letter grades are assigned as follows:

- A: 90% – 100%
- B: 80% – <90%
- C: 70% – <80%
- D: 60% – <70%
- F: <60%

Assignments

- Homework 45%
- Mid-Term Exam 25%
- Design Project 30%

Description of Graded Components

- **Homework:** Six homework assignments (75 points each) apply the hydrologic and hydraulic methods presented in lecture to realistic design problems. Homework is completed individually unless otherwise specified in the assignment.
- **Mid-Term Exam:** One in-class examination (250 points) covering all material presented prior to the exam date.
- **Design Project:** A team-based final design project (300 points) integrates the hydrologic and hydraulic methods of the course into a complete stormwater design with professional written deliverables. Team members are expected to formalize expectations for each member, communicate effectively, and contribute according

to those agreed-upon standards. Any problems with team dynamics that members cannot resolve independently should be brought to the attention of the instructor before, not after, the project is due. Although all team members typically receive identical grades for the project, the instructor reserves the right to withdraw credit from students who do not meet team expectations.

- **Late assignments are not accepted.** This applies to every assignment in the course and to every student. Issues such as technical difficulties, memory lapses, and other personal planning challenges do not qualify as exceptions to this rule. Students with a major multi-week issue preventing completion of assignments (for example, a long-term hospital stay) should contact the instructor to discuss potential alternative arrangements.

Course Policies

Attendance and/or Participation

This course is in-person only. Students who are unable to attend (for example, due to illness or other excused reasons) should notify the instructor as soon as practicable. Students are responsible for all material covered and for completing all assignments, even when accommodations are provided.

Excused absences are verified through the [Class Absence Verification Form](#) provided by the Office of Student Life. Neither the Dean of Students nor any other campus office issues “excuse notes” for routine absences. However, the Dean of Students will notify faculty in cases of emergencies such as hospitalizations or family emergencies when a student is unable to communicate directly.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review [Georgia Tech’s Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations. Questions about academic integrity in this course should be directed to the instructor at joe.manous@gatech.edu.

Core IMPACTS

[Core IMPACTS](#) is the University System of Georgia’s General Education curriculum. CEE 4803G does not count toward a Core IMPACTS area.

Accommodations for Students with Disabilities

Students with learning needs that require special accommodation should contact the [Office of Disability Services](#) (404-894-2563) as soon as possible to make an appointment to discuss those needs and to obtain an accommodations letter. Students should also e-mail the instructor as soon as possible in order to set up a time to discuss their learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The [Student-Faculty Expectations](#) articulate some basic expectations that students can have of the instructor and that the instructor has of students. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment sought in this course. Students are encouraged to remain committed to the ideals of Georgia Tech while in this class.