2025 ASCE Gulf Coast Student Symposium
Water Resources Competition Rules
March 6-8th, Richard A. Rula School of Civil and Environmental Engineering, Mississippi State University, MS

Water is the most critical fluid and a fundamental element for the survival of every living organism, including humans, animals, and plants. Understanding water movement through the earth's systems (Hydrology) or specific channels/structures like pipes (Hydraulics) is significant in supporting the analysis and decision-making procedures involved in planning, designing, maintaining, and operating water management systems.

1. **Objective:** Two demonstrations will test the learning skills of students about fundamental hydrologic and hydraulic processes. In demonstration 1, a rainfall simulator (Figure 1a) will evaluate a Watershed's hydrologic response under different land cover conditions and rainfall intensity. In demonstration 2, a pipe network system (Figure 1b) will determine pressure losses on closed conduits due to pipe diameter and flow rate variations.

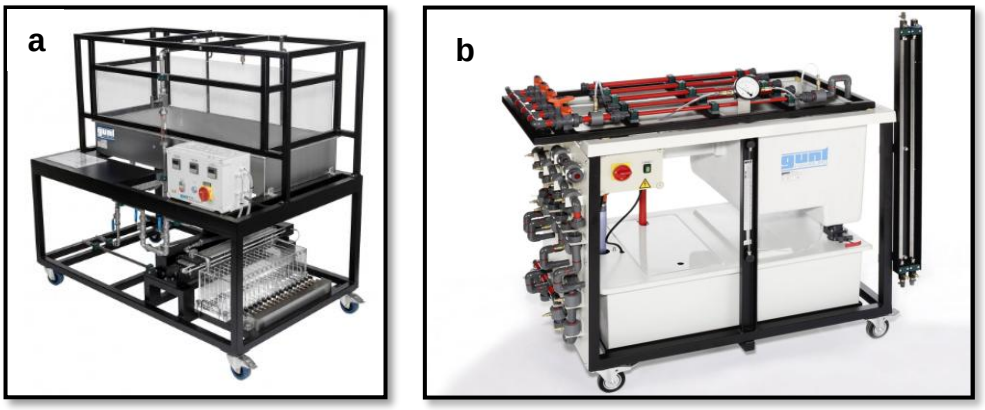

Figure1.Rainfall Simulator (a) and Pipe Network System (b)

2. **Eligibility:** A Water Resources Team will consist of no more than five students, with one student recognized as the team captain. Students must be enrolled full-time in civil engineering during the spring 2025 semester and meet all other eligibility requirements to participate in an ASCE student symposium. Each university is allowed only one competing team.

3. **Description of Hydraulic/Hydrologic Competition:**
   - *Demonstration 1-Watershed Hydrologic Response.* Using a rainfall simulator, the hydrologic response will be evaluated on two land cover conditions (pastures and urban). The flow will be applied at a constant rate under saturated conditions. Each team will collect and evaluate information that relates the watershed hydrologic response.
   - *Demonstration 2-Water transport in closed conduits.* A pipe network system will be used to evaluate the pressure loss that occurs in a flow-through pipe, which is caused by the friction of the flowing fluid on the pipe's wall. Pressure loss will be measured at different flow rates for three pipe diameters.

   Requirements: Members of the Water Resources Competition team must:
   - Review the overview provided at the time of registration.
   - The team must be on time to complete the demonstrations and collect data for analysis.
   - All members should be present at the time of the competition.

4. **Rules:** The Water Resources Competition team members shall obey the following rules:
   - Team leaders should send a Notice of Intent to register for the Hydrologic/Hydraulic Competition by email to asce25symposium@lists.msstate.edu no later than midnight February 14th, 2025. The email should include a statement indicating:
     a. The Student Chapter intends to participate in the competition.
     b. Names of the team members.
     c. Name and email address of the team captain.
   - Data analysis must be completed following demonstration completion.
   - Data analysis must be finished and submitted to the Head Judge in 60 minutes or less.
   - Participants are not allowed to access electronic devices or the internet (including cell phones) or collaborate with others outside of their team during the competition. FE approved calculators are acceptable.

5. **Judging:** Calculations and data analysis will be assigned points. The team with the maximum number of points will win the competition. If multiple teams have the same points, the team that submitted the data analysis faster will win. All rules' interpretations, adjudications, and additions will be at the sole discretion of the Head Judge.

6. **Award:** An Award or certificate will be provided to each of the top three teams.

7. **Requests for Information (RFI):** RFIs should be sent to jramirez@cee.msstate.edu and/or sandraortega@cee.msstate.edu.