

Rainwater Harvesting & Accreditation Workshop (Level 200)

General Course Content

ARCSA's Level 200 workshops are open to the public, or any industry professional looking to learn more details about rainwater harvesting. For anyone seeking the ARCSA Accredited Professional designation, this course is a requirement. The 200 Level workshops are two day courses designed to give attendees an in-depth review of rainwater harvesting design and installation, outdoor and in-home rainwater use; sanitation for potable uses; rules and regulations, guidelines and restrictions; business management; project planning; site and installation safety; and system construction and maintenance. The cost to attend this workshop is \$295. If you are seeking ARCSA Accreditation, the total cost to for the program is \$445 (this includes your registration to the workshop plus the additional accreditation fee of \$150).

Please note that the exact times and topic order may vary slightly with each specific workshop. Relevant handouts or presentations will be provided on-site. Light breakfast and lunch will be included. For those seeking ARCSA Accreditation, the completion of a Level 200 course is a requirement for attaining accreditation as an ARCSA Accredited Professional. Once completed, individuals must also pass an ARCSA Accreditation Exam in order to attain the ARCSA Accredited Professional designation.

The course Outline will follow the provided training manual developed by Texas A&M University "Rainwater Harvesting Planning" manual.

DAY 1

8:30 am - Check In & Registration

9:00 am - Introductions

This session will provide the group (1) the opportunity to introduce themselves and the rainwater industry they are involved with, (2) information on facilities ground rules, (3) an overview of the course, its purpose and structure, (4) a brief discussion of the water quality and quantity issues facing the Nation, and (5) review who ARCSA is and their mission.

9:50 am - Rainwater, Watersheds and Stormwater

Chapters 1,2. Discussions on nonpoint pollution, urban stormwater runoff and methods to reduce runoff through passive collection methods will be discussed. Also a brief introduction to a complex system and rainwater uses will be discussed.

10:30 am - The Planning Process - Business Ethics, Safety and Planning

Chapters 3,4,5. This session will describe practical business ethics and expectations of a professional. Safety concerns for the employees and construction sites will also be discussed along with assessing a location, working with clients and developing bids and contracts.

11:15 am - Rainfall Data, Estimating Supply and Demand

Chapters 6,7,8,9. This session will look at rainfall patterns, intensity, frequency, monthly and annual amount, and drought. There will be discussion on the amount of runoff from various surfaces, estimating runoff amounts and balancing the demand with the potential runoff or supply.

12:00 pm - Lunch

1:00 pm - Rainwater Collection - Rooftop to Catchment Container

Chapters 10, 11, 12, 13. This session will last the rest of day 1. There will be discussions on roof type, calculating gutter size and material, leaders or downspouts, wet and dry conveyance and basic hydraulics. The methods of pre-filtration and screening, first flush diversions, leader and pipe sizing, storage containers above and below ground, calming

5:00 pm – Day 1 Complete

DAY 2

8:30 am - Check In & Registration

9:00 am - Dry and Wet Conveyance and Basic Hydraulics

Chapter 13. Piping for a wet system requires a base knowledge in hydraulics and friction loss in sizing conveyance piping. This session will discuss these calculations and students will have a chance to solve friction problems. There will be a review of sizing gutters, downspouts, supply and demand and other first day questions.

10:30 am - Piping, Fittings, and PVC

Chapter 14. Pipe material, sizing, connecting and marking has to be done in any rainwater collection system. This session will discuss pipe material, problems and solutions in selecting and connecting various types of piping and connections.

11:15 am - Pumps and Controls

Chapter 15. Just as the storage tank is the heart of the rainwater system, the pump is the most crucial component of a pressured distribution system. Pumps are sized by performance specifications of a certain flow rate at a given pressure. This session will look at pump curves and calculating friction and other factors in selecting the right pump.

12:00 pm - Lunch

1:00 pm - Sanitation

Chapter 16. The most critical, complicated and controversial topic in the rainwater harvesting planning process is sanitation. Providing safe potable water is critical for the health of those consuming rainwater and paramount for those installing potable and non-potable systems. There are a number of potential toxins and pathogens that can enter the system along the process and the final step in construction is developing a sanitation system to match the needs of the client. This session will cover the primary toxins and pathogens and methods to prevent or remove these from being a potential hazard.

2:15 pm - System Maintenance

Chapter 17. The biggest challenge is constructing a rainwater collection system is building one that both provides for the customer's needs and almost maintenance free. Once completed the responsibility is turned over to the owner/operator to maintain a sufficient supply of safe water for its intended use. The system must be easy to maintain. The installer should provide the customers with a booklet outlining maintenance, check sheet with schedule and specific maintenance responsibilities, a trouble shooting checklist, a product list with warranties, resources and contact information. Also installers may develop a maintenance contract with customers to also check and maintain an installed system.

2:45 pm - Review, Questions, Final Course Assessment/Course Evaluation and Certificates

A review of all sessions, question and answer period and a post-course evaluation will be administered the course impact and knowledge gained. Certificates for additional 12 hours will be distributed as the class turns in evaluations.

3:00 pm - Day 2 Complete