

COCONINO COMMUNITY COLLEGE

COURSE OUTLINE

Prepared by: J. Costion
Status: Permanent

Date: 15 April'04

A. Identification:

Fee: \$5.00

1. Subject Area: Construction Technology / Green Building
2. Course Number: CTM 134
3. Course Title: Rain Water Harvest Systems
4. Credit Hrs: 1
5. Catalog Description :

This class will introduce students to rain water as a source of water for domestic and/or landscape use. All system components for proper and safe use of rainwater will be presented and discussed. Components include: roofing materials, gutters and gutter sizing, first flush diverters and downspouts, plumbing piping to and from tank, tanks, water purification, filtration and analysis issues, sources of contamination, water pumps and control devices, water conservation fixtures, water conservation strategies for domestic and landscape use, guiding principles for water conservation, examples of rain water harvest systems will be shown. One lecture. One lab. May be taken for S/U credit.

B. Course Goals: To provide students with the information of all necessary considerations for the installation of a rain water harvest system on their residence for domestic and/or landscape use.

C. Course Outcomes:

Students will:

1. Understand the necessary system components of a rain water harvest system.
2. Understand water analysis and potential contaminants.
3. Understand the benefits of operating a rain water harvest system.
4. Understand local weather data in order to properly size rainwater system components with demand.

D. Course Content:

Will include:

1. Rain water as a source of water for domestic use.
2. Rain water as a source of water for landscape use.
3. System components for proper and safe use of rainwater.
4. Present and discuss all system components including:
 - A. Roofing Materials
 - B. Gutters
 - C. Gutter sizing
 - D. First flush diverters

- F. Downspouts
 - G. Plumbing piping to & from tank,
 - H. Tanks – Different types of tanks and different materials for use as tanks.
Advantages & disadvantages of each type.
 - I. Water purification
 - J. Filtration - Different types of filters and different materials for use as Filters.
Advantages & disadvantages of each type.
 - K. Water pumps and control devices
 - L. Water conservation fixtures
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- 5. Water analysis issues- typical sampling and analysis report, where to get a sample analysis done, frequency of sampling intervals.
 - 6. Sources of water contamination, maintenance, design issues
 - 7. System sizing techniques for storage tanks
 - 8. Water conservation strategies for domestic use.
 - 9. Water conservation strategies for landscape use.
 - 10. Guiding principles for water conservation for landscape use.
 - 11. Examples of rain water harvest systems will be shown.
 - 12. Possible hands-on workshop
 - 13. Possible tours to various sites