

COCONINO COMMUNITY COLLEGE

COURSE OUTLINE

Prepared by: Joe Costion/ Charlie Laurel
Status: Permanent

Date: 03/07/06
Expires: N/A

A. Identification:

1. Subject Area: CTM
2. Course Number: 139
3. Course Title: Greywater
4. Credit Hrs: 1 1 Lecture
5. Catalog Description :

Don't let good "greywater" from tubs, sinks and washers do down the drain!
Greywater re-use for landscape irrigation is safe and legal when done properly. In this class we'll explore greywater options, some simple, some more complex, including systems that when combined with use of composting toilets constitute affordable alternatives for people with difficult "perc" conditions. May be taken for S/U credit with instructor approval. One lecture.

B. Course Goals:

- a. Understand Greywater and the law
- b. Understand how much Greywater we generate
- c. Understand the different Greywater systems
- d. Defining leech fields, mulch basins, etc
- e. Exploring commercially available systems on the web
- f. Understanding legal issues of Greywater and compost toilet-total systems

C. Course Outcomes:

Students will:

1. Understand Arizona's legal definition of Greywater
2. Understand Greywater in relation to shifting energy and economic conditions
3. Understand Greywater as part of total water-wise living
4. Define when kitchen water is also Greywater
5. Distinguish Graywater from Blackwater

D. Course Outcomes Assessment :

Assessment will include:

1. Faculty Testing & Quiz measurements
2. A variety of assessment measuring instruments and routine review by Faculty & Dept Personnel.

E. Course Content:

Will include:

- a. Greywater in relation to shifting energy and economic conditions
- b. Greywater as part of total water-wise living
- c. Burning questions?
- d. Definitions of Greywater
- e. Arizona legal definition
- f. When is kitchen water also greywater
- g. Why do we distinguish grey and black?
 - 1. Pathogens
 - 2. TDS and BOD
- h. How much greywater do we generate?
- i. Greywater and the law?
- j. What's legal: State, County, City of Flagstaff
- k. Shifting attitudes in the law
- l. Deciding about how to relate to the law
- m. What might get you in trouble
- n. Greywater Systems (Oasis Outline)
- o. Simple gravity systems
 - 1. City diagram
 - 2. Oasis ideas
- p. Tanks, pumps, filters, in general
- q. Leach fields, Mulch basins, etc,
- r. Soils conditions
- s. Perc definitions, SAR
- t. Leach field calculations
 - 1. example of leach field calculation for septic system
 - 2. example of calculation based on estimated greywater discharge
- u. Commercially available systems (on the web)
- v. Pros and cons of commercial vs. DIY
- w. Drip irrigation with greywater