

**COLLEGE OF EDUCATION
COURSE OUTLINE**

DEPARTMENT	COURSE DESIGNATOR AND NUMBER	SEMESTER HOURS
Teaching and Learning	TLCI 544	3

COURSE TITLE

Teaching Energy Alternatives and Energy Conservation

CATALOG DESCRIPTION

Theoretical and practical aspects of teaching basic concepts of energy alternatives and energy conservation. Learning experiences for awareness, understandings, skills and attitudes designed for teachers and other youth leaders in schools, camps, homes and other institutions.

COURSE OBJECTIVES

The student will:

1. Select and evaluate learning activities, resources, and projects for energy literacy suitable for use with both school and non-school populations. (K, P, R)
2. Analyze selected energy education curriculum materials as models of scope, content and activities applicable to one's own teaching or leadership situation. (K, P, R)
3. Develop an energy literacy to facilitate understanding of the current energy situation. (P, R)
4. Describe personal lifestyles and institutional changes which can lead to less energy consumption and more energy conservation. (P, R)
5. Discuss the current energy situation, including political, economic, social and environmental aspects of energy issues. (K, R)
6. Collect, organize, and analyze energy information, make basic energy assessments, and present data. (K, P)

SUBJECT MATTER CONTENT

1. Concepts essential for energy literacy. (Objectives 1, 2)
2. Criteria for designing and/or evaluating energy education curriculum materials. (Objectives 3, 4, 6)
3. Developing a rationale for increased forms of alternative energy and conservation within the context of traditional sources of energy. (Objectives 4, 5)
4. Current energy issues: supply, demand, resource depletion, environmental degradation, human health effects of energy use, economic well-being and energy efficiency, national security and international relations. (Objective 5)
5. Energy alternatives and conservation: fossil fuels (coal oil, gas and synthetics), hydroelectricity, nuclear fission and fusion, geothermal, tidal and wind, burning garbage, advanced conversion, hydrogen, solar, and conservation specifically in schools, camps,

homes, and personal lifestyles, but also in the society at large (buildings, industry, transportation, utilities, food production and recycling). (Objectives 4, 6)

6. Energy education curriculum materials appropriate for the age group and educational setting in which one works. (Objectives 1, 2, 3, 6)

SUGGESTED PRACTICES AND RESOURCES FOR INSTRUCTORS:

ILLUSTRATIVE COURSE ACTIVITIES

1. Lecture and audio visual presentations.
2. Energy audits of homes, schools and outdoor centers.
3. Construction projects and models: solar, wind, geothermal, etc.
4. Field trips to selected energy efficient buildings.
5. Examination of energy saving appliances and equipment.
6. Assigned readings and written assignments.
7. Guest speakers.

ASSESSMENTS

- Lesson plans (Required)
- Curriculum project
- Article critiques

RESOURCES

Alliance to Save Energy. (2002). *Power smart: Easy tips to save money and the planet*. Pueblo, CO: Federal Citizen Information Center.

Department of Natural Resources. (1990). *Home energy savings*. Springfield, IL.

Garbarino, J. (1992). *Toward a sustainable society*. Chicago: The Noble Press, Inc.

Knight, P. (2004). *The Chicago green bungalow project*. Berkeley, CA: Home Energy magazine.

Lazlo, E. (1994). *The choice: Evolution or extinction*. New York: G.P. Putnam's Sons.

Milani, B. (2000). *Designing the green economy*. Lanham, MD: Rowman & Littlefield Publishers, Inc.

Patterson, W. C. (1990). *The energy alternative*. London Box Tree Limited.

Photovoltaic technology. (1993). Camarillo, CA: Siemens Solar Industries.

Southface Energy Institute. (2000). *A guide for do-it-yourselfers*. Atlanta, GA: Home Energy Projects.

Stark, L. (Ed.). (1995). *Vital signs: The trends that are shaping our future*. New York: The Worldwatch Institute.

Sussman, A., & Koike, E., (2000). *Dr. Art's guide to planet earth: For earthlings ages 12 to 120*. San Francisco: WestEd.

Wisconsin Public Instruction. (2002). *Planning curriculum in science*. Madison: WI: Author.

THE SIGNATURES BELOW VERIFY THAT:

1. This course is designed to meet the standards of the following accrediting bodies, professional societies, and/or mission statements as appropriate: N/A.
2. Details concerning which standards are met by the course can be found at: Teaching and Learning Department Office.
3. This course is _____ is not X required for certification. If the course is required for certification, specify which:

REVISIONS: February 1985
December 1997
February 2003
November 2004
February 2008

APPROVED:



Chair, Department Curriculum Committee

3/25/08

Date



Chair, Department

3/25/08

Date