



Technical College of the Lowcountry
921 Ribaut Road
Beaufort, SC 29901

Industrial Technology Division
Building 14, Room 117
843-525-8241

EEM 280
Overview and Issues of Alternative Energy

Course Description

This course is an overview of the social and political issues surrounding the development and implementation of alternative energy devices in residential suburban and urban settings. It will also look at current and future energy generation strategies. 3 Cr (3 lect/pres, 0 lab, 0 other)

Course Focus

The focus of this course is to expose the student to issues in alternative energy and its effect on factors such as society, economics, and the environment. It is essential that students prepare for class by reading text and listed articles via the Internet.

Text and References

Alternative Energy Demystified, Stan Gibilisco, McGraw Hill, New York, 2007. ISBN-13: 978-0-07-147554-9

Course Goals

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives.

1. discuss alternative energy definitions
2. recognize sustainable and non sustainable fuel
3. list energy efficiency elements
4. discuss fossil fuel energy consumption rate
5. define energy conversion characteristics
6. compare the joule, calorie, and BTU definitions
7. discuss space efficiency
8. relate alternative energy space use
9. debate negative international alternative energy impact
10. elaborate alternative energies limited availability
11. discuss evolution from traditional energy to renewable energy
12. define tidal energy
13. articulate reasons for wind energy
14. discuss gasoline and hydrogen alternatives
15. describe hydrogen fuel
16. categorize fuel cells
17. discuss political and economic issues
18. tabulate solar panel applications
19. discuss solar panel architectural issues
20. list sources of biomass energy
21. articulate ethanol versus food production concepts
22. debate ethanol versus oil fuels
23. breakdown American coal reserves

24. discuss coal versus renewable energy
25. relate CO2 coal fuel issues
26. debate thunderstorms as alternative energy sources
27. list hot water heating alternative energy sources
28. research solar thermal heating
29. debate wood as a hot water heating source
30. define geothermal energy
31. define fusion energy
32. discuss nuclear fuel sustainability
33. debate nuclear fuel societal fear
34. list fusion versus fission fuel differences
35. research Savannah river site
36. list SRS potential jobs
37. describe the electrical transmission grid
38. list potential grid problems
39. calculate conventional electrical grid losses
40. define off grid
41. define grid tie

Student Contributions

Each student will spend at least 6 hours per week preparing for class. Attendance is critical in this class.

Course Evaluation

Unit exams will be performed on manual exam (pen and paper) and Electronic Workbench performance exams.

Grading:	90 - 100	A
	80 - 89	B
	70 - 79	C
	60 - 69	D
	00 - 59	F

Course Schedule

The class meets for 3 lecture/presentation hours per week.

ADA STATEMENT

The Technical College of the Lowcountry provides access, equal opportunity and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. To request disability accommodation, contact the counselor for students with disabilities at (843) 525-8228 during the first ten business days of the academic term.

ACADEMIC MISCONDUCT

There is no tolerance at TCL for academic dishonesty and misconduct. The College expects all students to conduct themselves with dignity and to maintain high standards of responsible citizenship.

It is the student's responsibility to address any questions regarding what might constitute academic misconduct to the course instructor for further clarification.

The College adheres to the Student Code for the South Carolina Technical College System. Copies of the Student Code and Grievance Procedure are provided in the *TCL Student Handbook*, the Division Office, and the Learning Resources Center.

ATTENDANCE

The College's statement of policy indicates that students must attend ninety percent of total class hours or they will be in violation of the attendance policy.

- Students not physically attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Students taking an online/internet class must sign in **and** communicate with the instructor within the first ten calendar days from the start of the semester to indicate attendance in the class. Students not attending class during the first ten calendar days from the start of the semester must be dropped from the class for NOT ATTENDING.
- Reinstatement requires the signature of the division dean.

In the event it becomes necessary for a student to withdraw from the course **OR if a student stops attending class, it is the student's responsibility to initiate and complete the necessary paperwork.** Withdrawing from class may have consequences associated with financial aid and time to completion.

When a student exceeds the allowed absences; the student is in violation of the attendance policy. The instructor **MUST** withdraw the student with a grade of "W", "WP", or "WF" depending on the date the student exceeded the allowed absences and the student's progress up to the last date of attendance *or* under extenuating circumstances and at the discretion of the faculty member teaching the class, allow the student to continue in the class and make-up the work. This exception must be documented at the time the allowed absences are exceeded.

Absences are counted from the first day of class. There are no "excused" absences. All absences are counted, regardless of the reason for the absence.

- A student must take the final exam or be excused from the final exam in order to earn a non-withdrawal grade.

A copy of TCL's **STATEMENT OF POLICY NUMBER: 3-1-307 CLASS ATTENDANCE (WITHDRAWAL)** is on file in the Division Office and in the Learning Resources Center.

HAZARDOUS WEATHER

In case weather conditions are so severe that operation of the College may clearly pose a hardship on students and staff traveling to the College, notification of closing will be made through the following radio and television stations: WYKZ 98.7, WGO 98.3, WGZO 103.1, WFXH 106.1, WWV 106.9, WLOW 107.9, WGZR 104.9, WFXH 1130 AM, WLVA 101.1, WSOK 1230 AM, WAEV 97.3, WTOG TV, WTGS TV, WJWJ TV, and WSAV TV. Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. www.tcl.edu/textalert.asp

Emergency Text Message Alert

Students, faculty and staff are highly encouraged to opt in to the Emergency Text Message Alert System. Participants receive immediate notification of emergency events and weather cancelations via text messaging on their cell phones. Participants can also opt in to receive non-emergency news and announcements. Go to www.tcl.edu. On the homepage, click on “emergency TextAlert at TCL” and fill out the form or go to www.tcl.edu/textalert.asp

BROADCAST LEARNING FORMAT: This class is being taught in a broadcast learning format. Images and word of class participants may be transmitted live or on a delayed basis to other locations. Classes may be rebroadcast due to extenuating circumstance.