Note:

Course content may be changed, term to term, without notice. The information below is provided as a guide for course selection and is not binding in any form, and should <u>not</u> be used to purchase course materials.

LIBERTY UNIVERSITY

COURSE SYLLABUS

ENVR 330

ENERGY RESOURCES AND EFFICIENCIES

COURSE DESCRIPTION

An analysis of the various sources of energy (both fossil and renewable) utilized by modern societies, including the means by which these sources are acquired, produced, distributed, and consumed. Includes a survey of methods by which user-end efficiencies and/or alternatives can reduce the amount of energy consumed.

RATIONALE

This course is required for students enrolled in the B.S. in Business Administration Cognate in Green and Sustainable Management.

I. PREREQUISITE

For information regarding prerequisites for this course, please refer to the Academic Course Catalog.

II. REQUIRED RESOURCE PURCHASE

Click on the following link to view the required resource(s) for the term in which you are registered: http://bookstore.mbsdirect.net/liberty.htm

III. ADDITIONAL MATERIALS FOR LEARNING

A. Computer with basic audio/video output equipment

B. Internet access (broadband recommended)

C. Blackboard recommended browsers

D. Microsoft Office

IV. MEASURABLE LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to:

A. Calculate the energy densities of fuel sources and the energy efficiencies for various power-generation methods.

B. Describe a comparison of diverse conventional and alternative methods for electricity production.

C. Determine the timeframe for returns on investment for commercial and residential efficiency projects.

D. Articulate a biblical view of energy and resource stewardship.

E. Measure personal energy usage and determine methods of conservation.

F. Construct a detailed proposal for energy-saving retrofits to an existing building.

G. Discuss the benefits and drawbacks to government-sponsored incentives (rebates, credits, and subsidies) for the production and installation of energy-efficient products.

V. COURSE REQUIREMENTS AND ASSIGNMENTS

A. Textbook readings and lecture presentations

B. Course Requirements Checklist

After reading the Syllabus and Student Expectations, the student will complete the related checklist found in Module/Week 1.

C. Discussion Board Forums (4)

The student is required to provide a thread in response to the provided prompt for each forum. Each thread must be at least 250 words and demonstrate course-related knowledge. In addition to the thread, the student is required to reply to 1 other classmate's thread. Each reply must be at least100 words.

D. Energy Production Report

The student will write a 5–6-page research-based paper in current APA format that focuses on one of the various methods of energy production. The paper must include at least 3 references in addition to the course textbooks and the Bible. A title page, figures page(s), and reference page are required.

E. Energy Monitoring Report

The student will write a 2–3-page research-based paper in current APA format that focuses on personal energy use monitoring and an action plan for energy efficiencies.

F. Stewardship Essay

The student will compose a 4–5-page personal reflection essay on stewardship concepts and their relation to Christian perspectives of man's place and role in God's creation. This paper will be written in Microsoft Word and follow current APA formatting rules. The student is expected to research adequately the chosen topic and provide bibliographic reference to at least 3 academic sources in addition to the course textbooks. This paper must include a title page and reference page.

G. Quizzes (4)

Each quiz will cover the Reading & Study material for the Module/Week in which it is assigned. They will be open-book/open-notes, contain 20 multiple-choice questions, and have a 25-minute time limit.

H. Exams (2)

The Midterm Exam will cover the Reading & Study material for Modules/Weeks 1–4, and the Final Exam will cover the Reading & Study material for Modules/Weeks 5–8. Each exam will be open-book/open-notes, contain 45 multiple-choice questions and 1 short answer question, and have a 1-hour time limit.

VI. COURSE GRADING AND POLICIES

A. Points

Course Requirements Checklist		10
Discussion Board Forums (4 at 40 pts ea)		160
Energy Production Report		100
Energy Monitoring Report		80
Stewardship Essay		100
Quizzes (4 at 40 pts ea)		160
Exams (2 at 200 pts ea)		400
	Total	1010

B. Scale

A = 900–1010 B = 800–899 C = 700–799 D = 600–699 F = 0–599

C. Disability Assistance

Students with a documented disability may contact Liberty University Online's Office of Disability Academic Support (ODAS) at LUOODAS@liberty.edu to make arrangements for academic accommodations. Further information can be found at www.liberty.edu/disabilitysupport.

VII. BIBLIOGRAPHY

MacKay, D. (2009). *Sustainable energy - Without the hot air* (1st ed.). Cambridge, England: UIT Cambridge, Ltd. ISBN: 9780954452933. Free to download at www.withouthotair.com.

Ngo, C. and Natowitz, J. (2009). *Our energy future: Resources, alternatives, and the environment* (1st ed.). Hoboken, NJ: John Wiley & Sons, Inc. ISBN: 9780470116609.

Evangelical Environmental Network. (2011). *Evangelical environmental network*. Retrieved from http://www.creationcare.org/

Cornwall Alliance. (2013). *Cornwall alliance: For the stewardship of creation*. Retrieved from http://www.cornwallalliance.org/

Murphy, D. T. (2013, May 28). Retrieved from http://physics.ucsd.edu/do-the-math/

Real Clear Energy. (2013, June). *Real clear energy*. Retrieved from http://realclearenergy.com/

LIBERTY UNIVERSITY

COURSE SCHEDULE

ENVR 330

Textbooks: Amann et al., *Consumer Guide to Home Energy Savings* (2012).
Wolfson, *Energy, Environment, and Climate* (2017).

MODULE/ WEEK	READING & STUDY	ASSIGNMENTS	POINTS
1	Wolfson: chs. 2–3 1 presentation	Course Requirements Checklist Class Introductions DB Forum 1	10 0 40
2	Wolfson: chs. 4, 7 1 presentation	DB Forum 2 Quiz 1	40 40
3	Wolfson: chs. 5–6 1 presentation	Energy Production Report Quiz 2	100 40
4	Wolfson: chs. 9–10 2 presentations	Midterm Exam	200
5	Wolfson: chs. 8, 11 1 presentation	DB Forum 3 Quiz 3	40 40
6	1 presentation 1 video	DB Forum 4 Energy Monitoring Report	40 80
7	Amann et al.: chs. 1–6 1 presentation	Stewardship Essay Quiz 4	100 40
8	Amann et al.: chs. 7–13 1 presentation	Final Exam	200
		TOTAL	**1010**

DB = Discussion Board

NOTE: Each course week (except Module/Week 1) begins on Tuesday morning at 12:00 a.m. (ET) and ends on Monday night at 11:59 p.m. (ET). The final week ends at 11:59 p.m. (ET) on Friday.