



Energy Management – Online/Hybrid S17 10-481-110 #63789

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Required Materials: Computer with Internet Access and the following software

Adobe Acrobat Reader

Word Processor Application (e.g. MS Word*)

Spreadsheet Application (e.g. MS Excel*)

Presentation Application (e.g. MS Powerpoint*)

** MS compatible alternative software (GoogleDocs, Open Office, etc.) is also acceptable*

Prerequisites: College Algebra – math calculations will be necessary in this class. Some prior knowledge of physics, chemistry, and energy will be helpful. This class will also make extensive use of Internet Web browsers, word processor and **spreadsheet** software.

Textbook: *Guide to Energy Management*. 7th or 8th edition. by Capehart, B.L., Turner, W.C., and W.J. Kennedy. New York: Fairmont Press, 2011. (7th ISBN: 0-88173-671-6, 8th ISBN 0-88173-765-8)

Supplies: You will need a scientific calculator that you are comfortable using (TI-30Xa or TI-30XIIS are used in some of the videos for this course), access to a computer, and a webcam or microphone for some assignments. You may also want to use your H: drive or a USB drive to save/backup your work.

Expectations: Because we will be interacting as a group online and for a short time weekly, it is important that students' complete assignments in a timely fashion. Students are expected to conduct themselves and interact in a professional, positive, and respectful manner at all times.

Course Description: In this course, students learn how to calculate, measure, and manage the energy consumption of buildings. Students learn to navigate the growing list of energy efficiency strategies and technologies. Topics include energy auditing, accounting, monitoring, targeting, and reporting; energy management opportunities; and project and financial management. This course is suitable for any student with an interest in sustainability, facility management and renewable energy, particularly those pursuing studies in scientific, technical, and engineering fields. There may be one field trip to observe a home energy audit held in Mid April. The textbook will be used extensively, however not all chapters of the book will be covered.

This is a 3-credit, 100-level physical science elective course. This course satisfies credit requirements for the [Photovoltaics](#) and [Renewable Energy](#) certificates offered at Madison College. Students should expect to spend roughly 4-6 hours per week on this course.

Course Outcomes: By the end of this course, students will be able to:

- Determine and calculate building energy costs
- Conduct a preliminary energy audit
- Define scope of energy management programs and opportunities
- Analyze life-cycle costs and payback periods for energy management opportunities
- Identify the key elements in monitoring energy management projects

		Hybrid	Online
Grades:	attendance	10%	0%
	assignments	25%	35%
	quizzes	25%	25%
	online discussions	15%	15%
	final exam	25%	25%

Homework: Homework assignments will be given throughout the course. The assignments will require the use of web-based resources, along with computer spreadsheet applications for data analysis. Students are encouraged to work together on homework assignments and consult with one another to answer questions. Each student must however, submit their own set of answers/solutions to the assignments. Work submitted after the due date will have a 10% reduction in grade for each week it is late. **HOWEVER!!** This year I'm adding a carrot to go with the stick. For every **DAY** your assignments are submitted **BEFORE** the due date, I'll add 3% to the earned grade up to a maximum of 20%.

Quizzes: Several quizzes will be administered during the course. Quizzes will be announced beforehand.

Discussions: There will be several online discussion boards during the class – roughly one discussion every other week. In order to facilitate a good dialogue in the course, it is important that you read and post comments to the discussions in a timely manner. Late contributions that are posted after the due date will not receive credit.

Final Exam: The final exam is cumulative, and will include content from all of the chapters covered in class.

Grading Scale:	A	93-100
	AB	88-92
	B	83-87
	BC	78-82
	C	70-77
	D	60-69
	F	< 60

Communication Policies and Information

I make an attempt to respond to email or phone messages within 24 hours between 9am and 4pm Monday through Friday. Email is the preferred method of contact. Please note that I typically do NOT CHECK my email on the weekends.

Netiquette: If you are unfamiliar with online culture or are unfamiliar with "netiquette," you may appreciate a review of some guidelines covering email, discussion boards, etc. Please **do not** forward any emails or documents from your **classmates** in this course without their knowledge and/or permission. You may forward **my** emails or documents to anyone you think might find them helpful; however, please do not forward anything that violates your own or others' privacy rights.

Required email: I will communicate with you using your official Madison College email address, that ends in @madisoncollege.edu. Please email me from your official email account OR through Blackboard; I may not open emails from unknown domains for security reasons. **You are responsible for monitoring your Madison College e-mail account at least twice a week for the duration of this course, and more frequent use is strongly encouraged.**

Student Responsibilities: Students are expected to be familiar with Madison College policies and procedures. Many of the important [policies and procedures are on the Madison College website](#). Because this class is online and hybrid, you should also be aware of [the computer use guidelines](#), which govern acceptable computer interaction at Madison College.

Class Deadlines: This course is being offered in a hybrid and also 100% online format. Assignments will be issued on Wednesday each week, and will be due by midnight the following Wednesday. You may work on assignments whenever you like throughout the week, but be careful about leaving too much work until the last night. Please note that this course requires online discussion, which works best if you log in at a minimum of twice during the week. If you are having difficulty meeting these deadlines for any reason, it is your responsibility to contact the instructor ASAP to discuss with you.

Special Needs: If there are unique circumstances that could affect your performance in this class, please contact me at the earliest convenience to make necessary accommodations that will enable you to fully participate. Information of this nature will remain confidential.

TECHNICAL POLICES RELATED TO THE ONLINE FORMAT:

File Format Requirements: All text documents must be submitted as directed in Microsoft Word, Microsoft Excel or Adobe format, (.doc, .xls or .pdf files). If you create files using other platforms (e.g. Open office or Google Docs) be sure to save or export them in a compatible format. Some assignments may require other specialized formats; look for details in the guidelines for each assignment.

Technical Assistance: Computer difficulties are not an excuse for non-participation. If you experience problems with Blackboard or your computer, call (608)246-6666, or toll-free at (866) 277-4445. They can talk you through fixing many, many problems. Their hours are 7:00 a.m. to 10:00 p.m., Monday-Friday and 7:30 a.m. to 3:00 p.m. on Saturdays.

Problems with your personal computer (or help with webcams and the like) may be fixed if you take your computer to [Wolfpack Techies](#), a FREE computer repair service at Madison College for students and faculty. Fall semester hours are Mondays and Wednesdays 12:30-5pm, Fridays 8am-5pm, and Saturdays 8am-3pm in Truax 358.

Keep in mind that your instructor can be of only limited help in computer troubles. Your best bet is to phone the professionals above.

Blackboard Outages: Madison College does its best to keep our Blackboard classroom up and running. However, despite our best efforts, our virtual classroom may go down unexpectedly. It's also possible your computer will contract a virus or worm that will make you wail and gnash your teeth. Should this happen to you, *do not panic!* Phone the computer help desk at 608)246-6666, or toll-free at (866) 277-4445. If an assignment is due, please attach it to an email to your instructor.

Course Topics and Timeline (all subject to change)

Week 1	Introduction, Getting Online, Introduction to Energy Management
Week 2	Introduction to Energy Management
Week 3	The Energy Audit Process: An Overview
Week 4	Understanding Energy Bills
Week 5	Understanding Energy Bills
Week 6	Understanding Energy Bills wrap up
Week 7	Economic Analysis and Life Cycle Costing
Week 8	Economic Analysis and Life Cycle Costing wrap-up and mid term
Spring Break	
Week 9	Lighting
Week 10	Heating, Ventilating, and Air Conditioning
Week 11	Understanding and Managing Boilers & Steam Distribution Systems
Week 12	Control Systems and Computers & Energy Systems Maintenance
Week 13	Insulation
Week 14	Renewable Energy Sources and Water Management
Week 15	Review
Week 16	Final exam