

# ITEC 4310 Energy Technology

ITEC 4310.783, Summer 7W1, 2020

## Official Syllabus May 2020



### Basic Information

Dr. Robert Morrison Ph.D.

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Office Location: MB 2232

Office Hours: Posted on Canvas and Office Door

Office Phone: 432.552.2200

Instructor Web Page URL: <http://www.utpb.edu/cobe/faculty/management/faculty/robert-morrison>

Course Dates: May 13, 2020 – June 28, 2020

Course Credits: 3

This course is a Web Course and is conducted within Canvas at <http://utpb.instructure.com>

### Course Description

#### Course Catalog Description:

Energy sources and how the sources produce usable power. Future trends in the area of energy technology.

**Purpose:** This course is a study of energy sources and how the sources produce usable power, and future trends in the area of energy technology.

**Objectives/outcomes:** Managers, technical personnel, and engineers must be knowledgeable about energy sources and how the sources produce usable power, and future trends in the area of energy technology.

**General Topics:** Energy, power, and transportation technology, nonrenewable sources of energy, nuclear energy, renewable energy sources, solar energy, electrical power systems, mechanical power systems, fluid power systems, electronics, small gas engines, transportation systems.

**Target Audience:** Junior/Senior

**Required for any specific major:** Major elective for online BAAS in Industrial Technology, B.S. Industrial Technology.

**Method of instruction:** online lectures, discussions, exams.

#### Measurable Learning Outcomes:

By the end of this course, you should be able to:

- Identify the various forms of energy and power

- Identify the types of energy surrounding us
- Differentiate among renewable, nonrenewable, and inexhaustible energy
- Define Energy, Power, and Transportation
- Identify the various forms of transportation
- **Prerequisites:** There are not prerequisites for this course

## Materials

### Required Materials:

Textbook: *Energy, Power and Transportation Technology* by Len Litowitz and Ryan Brown, G-W Publishers.

Print ISBN: 978-1-60525-555-2

E-Book: <https://www.g-wonlinetextbooks.com/energy-power-transportation-technology-2012/>

**Recommended Materials:** none

**Other materials:** Broadband Internet connection and a computer with webcam and microphone capable of running Respondus Lockdown Browser for taking exams. Respondus Lockdown Browser is free and downloaded using the link below.

<http://www.respondus.com/lockdown/download.php?id=841715130>

## Important Academic Dates

**UTPB Academic Calendar:** <http://www.utpb.edu/services/academic-affairs/office-of-the-registrar/academic-calendar>

## Course Overview

**Readings:** 27

**Exams/Quizzes:** 3

**Assignments:** 1

**Research Projects:** 0

**Discussion Topics:** 5

**Final Exam:** 1

**Presentations:** 0

### Grading:

Course Category	Number of/points per	Points
Exams and Quizzes	3/100	300
Discussions	7/20	120
Individual Paper	1	100
<b>Total Points</b>		<b>520</b>

### Grading Scale:

Grade Range	Letter Grade
90 and above	A
80 to 89	B
70 to 79	C
60 to 69	D
Less than 59	F
	(- 0,1,2,) (+ 7,8,9)

### Communication, Grading & Feedback:

All the course activities will be graded within approximately one week after the set due date. You can check your grades by going to Grades. If there is any discrepancy in the grade, you must contact me immediately via the Canvas Internal Messaging Tool. I will provide individual feedback or a general feedback in the performance of the course activity. Assignments are graded according to the point value allocated in the course assessment section. At the end of the course the course I will evaluate the Quiz score mean and median, with the low outliers of students who stopped participating removed. I will then adjust the total point value of each student by exactly the same value, up or down, to obtain a mean or median, whichever is higher, of approximately 81 -83% based on the instructors evaluation of the distribution. This methodology results in a cumulative exam grade for each student based on how they performed relative to peers taking exactly the same course with exactly the same assignments at exactly the same time. The exams are intended to be rigorous; however, the grading system insures a reasonable grade distribution. Discussion and paper grades are not included in the adjustment because there is no excuse for missing or not doing well on those assignments.

In the Rubric for the Individual Project Proposal assignment 40 points are awarded based on the appropriateness of the topic to the course and quality of sources and quality of the content. There will be a major point deduction for excessive use of quotations to fill the paper by copy/paste/cite to create a paper, no more than 20% should be direct quotes. Five points are awarded based on grammar and writing style and 5 points are awarded based on APA Style formatting. You may not recycle a paper submitted from a previous course. The paper should be 4 to 8 double spaced pages not including cover pages or reference pages. Follow the American Psychological Association (APA) style. There should be a minimum of 4 references, preferably from peer-reviewed academic journals, which you can access through the UTPB Library databases, EBSCO, Business Source Complete, or reputable news sources or company websites.

### Policies

1. Online classes offer a great deal of flexibility; however, the fact that there is not a regular meeting time complicates communication. Please note that this is a fully online class conducted in the Canvas Learning Management System that students can access 24/7 during the term. It is not a 24/7 private tutoring session via email or texting. Although students may work on assignments day or night, instructors are not required to work 24/7 to respond instantly to student questions or problems. I will log in to the class at least one time per day on weekdays

unless some unusual event, such as travel or meetings, prevents me from doing so. I usually log in to the class at least one time over the weekend.

All communication must take place in the Canvas Learning Management System via the Class Problems and Solutions discussion board and the Canvas Internal Messaging tool. During the term of the course, I will not communicate with students about course issues via UTPB internet email. If you email my UTPB email address you will either not get a response or the response will be "Follow Class Communication Policy". The main reasons for this policy are that I get dozens of UTPB internet emails daily and your email will be easily missed among the clutter. More importantly, by keeping all communication within the Learning Management System it is archived and easy to refer back to if needed. When I have a class announcement, I will post an announcement in the course Announcement area that may also be sent to your email account. There is no need to reply to these emails. If you want to ask me any course related question, please use Course Problems and Solutions discussion board and I will reply the next time I log in to the class. If someone has already ask the question do not make a "me too" posting as it only clutters up the discussion board. I will respond within 24-48 hours depending if it is a weekday or weekend. When you have a personal situation involving illness or the grading of your individual assignment, please send me a message using Canvas Internal Messaging tool, these are private, and I will respond within 24-48 hours depending if it is a weekday or weekend. I may interject in the graded discussion forums if I feel necessary. Otherwise I will only be reading and grading the discussion posts. I will not be looking into the group discussion boards unless a problem has been brought to my attention. I use the Paper Evaluation Rubric discussed under the grading section in this syllabus, to grade your papers. If you have any questions before or after taking a quiz, please send a message using Canvas Internal Messaging tool. All the course activities will be graded approximately one week after the set due date. You can check your grades by going to Grades. If there is any discrepancy in the grade, you must contact me immediately using Canvas Internal Messaging tool. I will provide individual feedback or a general feedback in the performance of the course activity.

2. **Discussion Board:** Discussion Board is primarily for discussing course related topics and issues.

There will be 8 graded discussion topics for the semester. Each discussion topic is worth 20 points; up to 10 points for the initial posting and up to 5 points for each of the 2 required responses to other students. For each graded discussion question, first, you must respond to the question directly during the first 2 days of the week and second, you must read the other students posts and reply to at least two other students responses. Week 1 Introduction discussion does not have the first post in first two days because students may enter the course late. You must ensure that the responses to the questions are meaningful, reflective, refer to personal experience and support your course readings. Avoid postings that are limited to 'I agree' or 'great idea', etc. If you agree (or disagree) with a posting then say why you agree by supporting your statement with concepts from the readings or by bringing in a related example or experience.

You are responsible for reading all of the messages that are posted in the online discussion. Not reading messages is the equivalent of sleeping in class. Use a person's name in the body of your message when you reply to their message. It helps to keep all of us oriented. It helps us maintain a clearer sense of who is speaking and who is being spoken to. As we begin to associate names with tone and ideas, we come to know each other better.

Best practices are:

- a. Read all message postings in online discussion.
- b. Respond to the question directly
- c. Reply to minimum of two other student posts.
- d. Use a person's name in the body of your message when you reply to their message.
- e. Avoid postings that are limited to 'I agree' or 'great idea', etc.
- f. Ensure responses to questions are meaningful, reflective.
- g. Support statements with concepts from course readings, refer to personal experience, examples.
- h. Follow **Rules of Behavior**.

3. **Rules of Behavior:** Discussion areas are public to every student in this class (including your instructor) who will see what you write. Please pay attention to the language you use and adhere to the following guidelines:

- Do not post anything too personal.
- Do not use language that is inappropriate for a classroom setting or prejudicial in regard to gender, race, or ethnicity.
- Do not use all caps in the message box unless you are emphasizing (it is considered shouting).
- Be courteous and respectful to other people on the list
- Do not overuse acronyms like you would use in text messaging. Some of the list participants may not be familiar with acronyms.
- Use line breaks and paragraphs in long responses.
- Write your full name at the end of the posting.
- Be careful with sarcasm and subtle humor; one person's joke is another person's insult.

4. **Make-Up/Late Submission Policy:**

Late submissions for assignments will be up to 3 days with a 25% deduction for each day. Exams and discussion boards are not allowed after the due date and no late submissions are permitted for any Week 8 assignments. Exams are open for several days so there is no excuse for missing them. However, if you do miss an exam there will be a comprehensive makeup exam open on the last week of the class that allows only 1 attempt. This exam will replace a missed exam, however, if you missed an exam and take the makeup, the highest grade you can receive for the course is C. The only exception to the maximum grade of C is if the student can provide evidence that they were completely incapacitated, as in hospitalized in a coma or full body cast, during the entire week the missed quiz was open. The makeup exam, will not replace a lower exam grade. If you take the makeup exam and did not miss an exam, then I will drop quiz highest-grade and use the lowest quiz scores to calculate your final grade. The best practice on quizzes and the paper is to prepare and plan in advance. If you decide to wait until the last days and something happens, then you have made the decision to take the risk of something happening. Both quizzes and the paper are open sufficient time for students to submit them.

5. **Academic Dishonesty/Plagiarism/Cheating:** The academic community regards academic dishonesty as an extremely serious matter, with serious consequences. Any effort to gain an advantage not given to all students is dishonest whether or not the effort is successful. Any

suspicion of academic dishonesty will be reported and investigated. A student who engages in scholastic dishonesty that includes, but is not limited to cheating, plagiarism, and collusion can receive an "F" for the course. Quizzes are to be taken with Respondus Lockdown Browser with webcam. Students must show a complete 360 degree view of the environment to clearly demonstrate that no unauthorized resource are nearby. Quizzes are to be taken with no resources (textbooks, notes, tablets, phones, other computer, people, etc.). The student's eyes should be pointed toward the screen throughout the exam. Continually looking off the screen is an indication of using unauthorized resources. It is the student's responsibility to clearly demonstrate that no other resources are used. Any doubt will lead to the student taking another exam before a live human proctor at an instructor approved testing center at the student's expense. Obvious use of unauthorized resources or other forms of academic dishonesty can result in a grade of F for the class and the student being reported to the Dean of Students Office for academic dishonesty which could result in failure in the class and/or suspension or dismissal from the college.

All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. For complete information on UTPB student conduct and discipline procedures consult the university's handbook at: <http://ss.utpb.edu/dean-of-students/scholastic-dishonesty/>

**Academic dishonesty** includes, but is not limited to cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor, or the attempt to commit such acts.

**Plagiarism** includes, but is not limited to the appropriation of, buying, receiving as a gift, or obtaining by any means material that is attributable in whole or in part to another source, including words, ideas, illustrations, structure, computer code, other expression and media, and presenting that material as one's own academic work being offered for credit.

7. **Attendance and Class Participation:** Regular and active participation is an essential, unmistakably important aspect of this online course. Students will log on a minimum of three times every seven days. All students are expected to do the work assigned, notify the instructor when emergencies arise.
8. **Tracking:** The learning management systems have a tracking features. Statistics are collected that quantifies how often and when students are active in the course and provides information if the student has accessed different pages of the course.
9. **Absenteeism:** All the course activities have set dates to be completed and submitted. After the due dates the activities will not be available for the students. Not logging into an online course is considered absenteeism. Contact instructor immediately in case of emergency medical situation.
10. **Course Incomplete/Withdrawal/Grade Appeal:**  
All students are required to complete the course within the semester they are signed up.

Incomplete grades for the course are rarely given, will only be granted if the student has completed the majority of course activities with a grade of C or better and provides a valid, documented excuse for not being able to complete the course on time, and has contacted the instructor prior to the scheduled last class to request an extension. The student signs a contract that includes the incomplete course activities and the new due dates.

Find information and dates regarding drops and withdrawals at

<http://www.utpb.edu/services/academic-affairs/office-of-the-registrar/adds-drops>. For grade appeal process go to <http://www.utpb.edu/campus-life/dean-of-students/grievances>. **NOTE: The due dates and times for the activities will adhere to the Central Time Zone.**

11. **Accommodation for Students with Disabilities:** Americans with Disabilities Act: Students with disabilities that are admitted to The University of Texas of the Permian Basin may request **Students with Disabilities:** The University of Texas of the Permian Basin in compliance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act provides “reasonable accommodations” to students with disabilities. Any student with a disability who is requesting an accommodation for this course must provide the instructor with official documentation in the form of a letter from the ADA Officer for Students. Only those students who have officially documented a need for an accommodation will have their request honored.

**ADA Officer for Students:** Mr. Paul Leverington

**Address:** Mesa Building 4242

**Voice Telephone:** 432-552-4696

**Email:** [ada@utpb.edu](mailto:ada@utpb.edu)

For the accessibility and privacy statements of external tools used within courses, go to [Accessibility and Privacy Statements](#).

This is a partial list that addresses

- Canvas
- Google (e.g. YouTube)
- Microsoft (e.g. MS Word)
- Adobe (e.g. PDFs)

## Computer Skills, Technical & Software Requirements

Student will need to create word processing documents, save files, and submit files. You will need to turn in files in Word (.doc or .docx or .rtf). You may also need to create spreadsheet files in .xls or .xlsx format or presentation files in .ppt or .pptx format. All the course assessment activities will be submitted in Canvas. Keep in mind the following standards/practices for submission of assignments: a. All course assessment activity files that will be submitted to the instructor should be in MS Word (.doc, .docx, or .rtf). If required, spreadsheets must be in .xls or .xlsx format. Some ITEC courses may require the use and submission of files from specialized software for areas such as computer drawing or project

management. In those cases specific instructions will be given on what software to obtain and where to obtain it and what file formats to submit the assignments.

UTPB provides support for Canvas for PC and Mac operating systems. ChromeBook, Linux, and iPad are not supported. Students can use cloud version of Word, PowerPoint and other Microsoft products through use of their UTPB Outlook 365 and UTPB email address. For more information refer to Student Services below or visit: <http://www.utpb.edu/services/ird/information-on-computer-accounts-e-mail/office-365>

To obtain software licensing and media for selected Microsoft titles at very low cost through a software agreement visit: <http://www.utpb.edu/services/ird/information-for-students/software-distribution/microsoft-select>.

**Computer Technical Requirements:** Information at <http://www.utpb.edu/online/reach/technical-requirements>

## Online Student Authentication

UTPB requires that each student who registers for an online course is the same student who participates in, completes, and receives credit for the course. UTPB's Distance Education Policy requires faculty members to employ at least two methods of verification to ensure student identities. To access online courses students must login to the UTPB learning management system using their unique personal identifying username and secure password. UTPB's Distance Education Policy requires at least one additional student identification method within the course that has been determined and approved by the faculty or academic program. This course satisfies the second method of student authentication by using Lockdown Browser with Respondus Monitor with the requirement to present an approved photo ID through a web cam. This course requires the use of LockDown Browser and Monitor for online exams.

Watch this short video (<http://www.respondus.com/products/lockdown-browser/student-movie.shtml>) to get a basic understanding of LockDown Browser and Monitor.

Download and install LockDown Browser from this link:  
<http://www.respondus.com/lockdown/download.php?id=841715130>

To take an online test, open LockDown Browser which opens Canvas and navigate to the exam. (You cannot access the exam with a standard web browser.)

When taking an online exam, follow these guidelines:

- Setup web cam for exams using Monitor and present an approved photo ID to the webcam when requested.

\*Approved photo identifications are: passports, government issued identification, driver's licenses, military ID from DoD; dual credit and early college high school students use school district identifications.



- Do not wear any hats or dark glasses while taking the exam
- No other person may be near you or assisting you in any way (exceptions for those with approved disabilities needing assistance)
- Any light should be from behind the camera toward your face, not from behind you into the camera lens
- Ensure you're in a location where you won't be interrupted.
- Turn off all mobile devices, phones, tablets, televisions, radios, etc. and remove them from the immediate area.
- Clear your desk of all external materials — books, papers, other computers, or devices and clearly demonstrate in the environmental view that the area is clear.
- Remain at your desk or workstation for the duration of the test.
- LockDown Browser will prevent you from accessing other websites or applications; you will be unable to exit the test until all questions are completed and submitted.
- It is the student's responsibility to clearly demonstrate compliance with procedures and that no unauthorized resources are used. Failure to do so will result in a minimum of having to take another exam before a live proctor at an instructor approved testing facility at the students cost which could exceed \$100. Obvious violations can result in a grade of F for the class and being reported to the Dean of Students office for academic dishonesty.
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## Preparation for Emergencies

**Computer Crash:** Not having a working computer or a crashed computer during the semester will NOT be considered as an acceptable reason for not completing course activities at a scheduled time. NOTE: Identify a second computer before the semester begins, that you can use when/if your personal computer crashes.

**Complete Loss of Contact:** If you lose contact with course connectivity completely (i.e. you cannot contact me via Canvas or email), you need to call instructor, and leave message regarding connectivity loss and contact information.

**Lost/Corrupt/Missing Files:** You must keep/save a copy of every project/assignment on an external drive, UTPB Outlook 365 OneDrive, or personal computer. In the event of any kind of failure (e.g. virus infection, student's own computer crashes, loss of files in cyberspace, etc) or any contradictions/problems, you may be required to resubmit the files.

## End-of-Course Evaluation & Instructor Evaluation

Every student is encouraged to complete an end-of-course evaluation/survey provided by UTPB. During the last few weeks of class, you will receive an announcement through email notifying you that the Course/Instructor Survey is available. You may follow the link in the email to complete the survey using the same credentials to access your courses here. When entering the emailed Survey link you will see a list of surveys for you to complete.

The survey is anonymous and your responses are confidential. Your feedback is critical to us and to your instructor as we strive to improve our offerings, and our support of you, the students.

## Student Support Services

SERVICE	CONTACT
ADA Accommodation/Support	Testing Services & Academic Accommodations Department (432) 552-2630 <a href="http://www.utpb.edu/academics/undergraduate-success/TSAAD">http://www.utpb.edu/academics/undergraduate-success/TSAAD</a>
Admissions & Registration & Transcripts	(432) 552-2605 <a href="http://www.utpb.edu/admissions">http://www.utpb.edu/admissions</a>
Advising	UTPB E-Advisor at <a href="http://cas.utpb.edu/academic-advising-center/e-advisor/">http://cas.utpb.edu/academic-advising-center/e-advisor/</a>
Bookstore	(432) 552-0220 <a href="http://www.bkstr.com/texas-permianbasinstore/home">http://www.bkstr.com/texas-permianbasinstore/home</a>
Financial Aid and Scholarship	(432) 552-2620 <a href="http://www.utpb.edu/campus-life/financial-aid">http://www.utpb.edu/campus-life/financial-aid</a>
UTPB Library	(432) 552-2370 The J. Conrad Dunagan Library Online at <a href="http://library.utpb.edu/">http://library.utpb.edu/</a>
Student Services	<a href="http://www.utpb.edu/campus-life/studentactivities/student-senate/committees/student-affairs">http://www.utpb.edu/campus-life/studentactivities/student-senate/committees/student-affairs</a>
UTPB Outlook 365 & Email	UTPB Email <a href="http://www.utpb.edu/services/ird">http://www.utpb.edu/services/ird</a>
Technical Support	Canvas 1-866-437-0867 <a href="https://guides.instructure.com/">https://guides.instructure.com/</a>
Tutoring & Learning Resources	If you are taking courses through UTPB the following links provide services: Smarthinking Online Tutoring (provides tutoring services), SmarterMeasure (measures learner readiness for online course).  Student Success Center: <a href="http://www.utpb.edu/academics/undergraduate-success/success-center">http://www.utpb.edu/academics/undergraduate-success/success-center</a>

### Disclaimer & Rights

Information contained in this syllabus was to the best knowledge of the instructor considered correct and complete when distributed for use in the beginning of the semester. However, the instructor reserves the right, acting within the policies and procedures of UTPB to make changes in the course content or instructional techniques without notice or obligation. The students will be informed about the changes, if any.

### Copyright Statement

Many of the materials that are posted within UTPB courses are protected by copyright law. These materials are only for the use of students enrolled in the course and only for the purpose of the course. They may not be further retained or disseminated.

Schedule Provisional subject to change

	<b>First Day</b>	<b>Last Day</b>
<b>Week 1</b>	Mon May 11	Sun Jun 17
<b>Week 2</b>	Mon May 18	Sun June 24
<b>Week 3</b>	Mon May 25	Sun May 31
<b>Week 4</b>	Mon Jun 1	Sun Jun 7
<b>Week 5</b>	Mon Jun 8	Sun Jun 14
<b>Week 6</b>	Mon Jun 15	Sun Jun 21
<b>Week 7</b>	Mon Jun 22	Fri Jun 26

#### **WEEK 1**

Topics: Intro to energy, Nonrenewable sources, Nuclear energy

Complete Introduction Discussion by end of Week

Read Chapters 1 through 4

#### **WEEK 2**

Topics: Renewable sources, Solar, Intro to Power, Electrical systems

Read Chapters 5 through 8

Complete Week 2 Discussion first post by day 2

#### **WEEK 3**

Topics: Mechanical power systems, Fluid power systems, Control tech, Electronics

Read Chapters 9 through 12

Complete Week 3 Discussion first post by day 2

Complete Quiz 1 by last day of Week 3

#### **WEEK 4**

Topics: Power conversion, Small gas engines, Transportation systems, Vehicular systems

Read Chapters 13 through 16

Complete Week 4 Discussion first post by day 2

#### **WEEK 5**

Topics: Land transport, Land vehicular systems, Water transport, Water vehicular systems

Read Chapters 17 through 20

Complete Week 5 Discussion first post by day 2

Complete Quiz 2 by last day of Week 5

**WEEK 6**

Topics: Air transport, Air transportation systems, Space transport, Space vehicular systems

Read Chapters 21 through 24

Complete Week 6 Discussion first post by day 2

Submit Individual Paper by last day of Week 6

**WEEK 7**

Topics: Intermodal Transportation, Energy, Power, Transportation and Environment and Future

Read Chapters 25 through 27

Complete Week 7 Discussion by last day of Week 7

Complete Quiz 3 by last day of week 7

Complete Makeup Quiz by last day of Week 8 if needed

Sample Syllabus