



**NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY
DIVISION OF UNIVERSITY STUDIES
UNST 212: CONTEMPORARY ENERGY ISSUES**

OVERVIEW:

CONTEMPORARY ENERGY ISSUES is an interdisciplinary course that utilizes subject matter from a variety of academic disciplines, to introduce students to energy issues of modern age including critical analysis of supply, consumption, political, pollution, and social issues using scientific reasoning. In **CONTEMPORARY ENERGY ISSUES**, students learn to critically look at the host of issues related to energy during our time. They can employ the learned skills to solve both discipline specific problems as well as interdisciplinary problems.

OBJECTIVES:

CONTEMPORARY ENERGY ISSUES has the following five objectives:

- Students will develop critical, logical, and analytical thinking skills in order to evaluate data and formulate reasonable conclusions.
- Students will use mathematical, scientific, and technological tools to analyze information and make informed decisions.
- Students will learn the basic concepts of hydropower, nuclear energy, non-renewable and renewable energy, recognition of political, social and economical impacts and understand their importance in modern world.
- Students will use the scientific method and formulate questions that will enable one to logically define, test, and ultimately solve a variety of energy related problems.
- Finally, students will utilize the above tools to analyze and evaluate news reports and statistical studies on energy issues.

REQUIRED TEXTS:

Godfrey Boyle, Bob Everett and Janet Ramage, *Energy Systems and Sustainability*. Oxford, 2004.

Prerequisites: There are no prerequisites for this class, other than an inquisitive mind. Students should be warned that **CONTEMPORARY ENERGY ISSUES** does require use of mathematical and statistical tools. We will present all the mathematics required to comprehend all of the topics addressed in the course.

GRADING: The summative evaluation will consist of: quizzes [10%]; homework [10%]; First examination [10%]; mid-term examination [20%]; third examination [20%], and a final examination [30%]. All grades are determined by your earned point totals. No other factors will be considered when determining your final grade. Anyone asking for special grading consideration will be referred to this policy. The final grading breakdown will be as follows:

Percentage	Letter Grade
100-93	A
92-90	A-

Percentage	Letter Grade
89-87	B+
86-83	B

Percentage	Letter Grade
82-80	B-
79-77	C+
76-73	C
72-70	C-

Percentage	Letter Grade
69-67	D+
66-63	D
62-60	D-
59 and below	F

DEADLINE & STUDENT RESPONSIBILITY POLICY:

Students are responsible for meeting all course deadlines. A deadline is the last day something is due, not the day you should wait to do it. All deadlines can be found on the course calendar. If you are unable to meet a deadline you may make arrangements in advance of a deadline for an extension. Any student who misses a deadline and did not make prior arrangements will not receive an extension (i.e. receives a zero for missed work). The only exception is if you can provide documentation demonstrating why a deadline could not be met given that you knew all deadlines in advance. Remember, responsible students plan ahead, complete work early, and contact us right away when a deadline cannot be met. All students are held to this policy, including those who ask for special exceptions.

ACADEMIC INTEGRITY: Academic honesty is absolutely essential. Cheating, plagiarism, sharing of clickers or other academic misconduct will not be tolerated. If you are caught cheating, you will not pass this course and will be subject to any and all penalties specified in the student honor code.

ATTENDANCE: University Studies strives to professionalize its students; therefore, regular attendance and punctuality are mandatory in all UNST courses. Attendance will be taken at the beginning of each class. Tardiness will not be tolerated.

Doors to the classroom will be closed ten minutes after class begins.

- Students arriving after that point will be marked absent.
- Students having four unexcused absences will automatically receive an “F” for the course.
- Absent or tardy students are responsible for any missed class work, including any changes to the syllabus or assignments announced in class.
- In short, absences and tardiness will diminish your grade.
- If you suffer prolonged illness or misfortune, you should consider dropping the course.
- Persistent tardiness and failure to observe established classroom etiquette will lead to failure of the course.

Student athletes must submit a schedule of days they will be absent *within the first week of classes*.

COURSE MATERIALS:

- **Books:** Serious scholarship requires procurement of essential course materials. Students will purchase all books and materials required for UNST courses within the first two weeks of the semester. Sharing of books thereafter is prohibited.
- **Clickers:** Sharing of clickers is strictly forbidden and constitutes academic dishonesty. Students must replace lost or stolen clickers for class use. Clicker will be loaned to students for the duration of the session, and they must be returned at the conclusion of the course. Students must register their clicker before it can be used. Follow instructions given in the classroom to register your clicker.

- **Calculator:** Students should bring a scientific calculator to every class. We recommend a simple model such as the Hewlett Packard 9s Scientific Calculator (111115), or the Texas Instruments TI-30X IIS both of which retail for about 15 dollars.

EDUCATIONAL ETIQUETTE: Students will demonstrate their respect for their professors and colleagues. Any behavior that distracts (e.g., eating, talking while others are talking, etc.) or is disrespectful (inattention, personal attacks, studying for other courses during class, etc.) is unacceptable. Differences of opinion should be met with intellectual curiosity and rigor rather than insult, contumely, or discord.

- All cell phones, pagers, and personal communication devices must be turned off for the duration of the class period.
- Students who fail to comply with this rule will be asked to leave the class and will be marked absent.
- Campus security will be asked to escort those students from of the classroom who fail to leave as requested.
- There will be no eating or drinking in class (other than bottled water).
- Student success in this course depends upon the development of scholarly and collegial habits. Active participation in class discussion and group work is mandatory. Collegial responsibility and respect are also compulsory.

EMAIL POLICY: Official correspondence from faculty, instructors and graduate assistants will use the North Carolina A & T email address. Students are responsible for the information received and are required to monitor their email accounts on a regular basis.

- All faculty, instructors and graduate assistants will reply to legitimate email inquiries from students within 48 hours with the exception of weekends or university holidays. If you do not receive a reply within this period, please resubmit your question(s) or phone your instructor. Leave a message if necessary.
- In accordance with the Aggie Pride, students should consistently communicate and behave in a manner that displays integrity, honesty, sound character, and virtuous ethics when using email to communicate with faculty, instructors, or graduate teaching assistants.
- Each email message **must include the course name and number, section number, and a concise and clear statement of purpose in the subject line.** You must also type your name as it appears on the course roster at the end of your message. [e.g., UNST212: Death in Family]; otherwise it is likely to be deleted, along with spam messages and messages potentially containing viruses.
- Please make sure you consult the course outline/syllabus, other handouts, and the course website **BEFORE** submitting inquiries by email.
- When a question cannot be easily or briefly answered by email, your instructor will simply indicate that the student should see him, her, or the appropriate TA during office hours.
- Email should **NOT** be seen as an alternative to meeting with your instructor or the TA during office hours. Nor should email be used as a mechanism to receive private tutorials (especially prior to tests) or to explain material that was covered in lectures you missed.

TIMELY SUBMISSION OF WORK: All assignments are due on the dates indicated in your syllabus.

- ***No late work will be accepted in any UNST courses.***
- Exceptions will be made only in cases of documented medical or family emergency or religious observance.

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- Please notify your professor by email before the assignment is due should an acceptable absence occur.
 - Employment, child care or other academic pressures do not constitute a valid excuse for late work.
 - There is no provision for additional papers or extra credit to substitute for missed course requirements.

OPEN DOOR POLICY: Each of your instructors maintains an open door policy. You are free to visit us during the posted office hours or, if you prefer a different time, arrange an appointment. If you are having a problem with the course, please contact your instructor immediately; problems, unlike fine wines, don't improve with age.

DISABILITIES AND DIFFERENCES: Students with documented learning disabilities or differences should identify themselves to their professor and present appropriate documentation during the first week of classes.

- No accommodations will be made later in the semester for students who do not identify themselves at the beginning of the course.
- Students who need developmental support should ask their professors for extra help or referral.
- All students should seek the support services of the Writing Center (A-309 GCB; 334-7764) and the Center for Student Success (312 Hodgkin Hall; 334-7855).

UNST212.01 COURSE SCHEDULE***NOTE:*** This syllabus is subject to revision as necessary at any time during the semester.

<i>Section:</i>	<i>Dates:</i>	<i>Outline of Topics to be Covered:</i>	<i>Readings</i>
ONE:	<u>BASICS OF ENERGY ISSUES</u>		
	August 20 - 24:	<i>Introduction</i>	Chapter 1 Homework Assignments: Read chapter 1 and answer questions of chapter 1 homework.
	<i>August 27 – 31</i>	<i>World Primary Energy Consumption</i>	Chapter 2 Homework Assignments: Read chapter 2 and answer homework questions for chapter 2
	<i>September 3-7</i>	<i>What do we use energy for?</i>	Chapter 3 Homework Assignments: Read chapter 3 and answer homework questions for chapter 3
	<i>September 10-14</i>	<i>Forms of energy</i>	Chapter 4 Homework Assignments: Read chapter 4 and answer homework questions for chapter 4
	<i>September 17</i>	<i>Exam 1</i>	Ch 1,2,3,4
	September 18-21	<i>Coal</i>	Chapter 5 Homework Assignments: Read chapter 5 and answer homework questions for chapter 5
	September 24-28	<i>Heat to motive power</i>	Chapter 6 Homework Assignments: Read chapter 6 and answer homework questions for chapter 6
TWO:	<u>INDIVIDUAL ENERGY SOURCES</u>		
	October 1-5	<i>Oil and Gas as Primary fuel</i>	Chapter 7-part 1 Homework Assignments: Read chapter 7 and answer homework questions for chapter 7
	October 8	<u>Midterm Examination</u>	Ch 5,6,7-part 1
	October 9-12	<i>Oil and gas as secondary fuel</i>	Chapter 7, part 2 Homework Assignments: Read chapter 7 and answer homework questions for chapter 7
	October 15-19	<i>Oil and Gas engines</i>	Chapter 8 Read chapter 8 and answer homework questions for chapter 8
	October 22-26	<i>Electricity</i>	Chapter 9 Homework Assignments: Read chapter 9 and answer homework questions for chapter 9

<i>Section:</i>	<i>Dates:</i>	<i>Outline of Topics to be Covered:</i>	<i>Readings</i>
	<i>October 29</i>	<i><u>Exam 3</u></i>	<i>Chapters 7 (part 2) ,8,9</i>
	<i>October 30,31, November 1-2</i>	<i>Nuclear Power</i>	<i>Chapter 10 Homework Assignments: Read chapter 10 and answer homework questions for chapter 10</i>

THREE:	<i><u>SUSTAINABILITY OF SOURCES</u></i>		
	<i>November 5-9</i>	<i>The future of nuclear power</i>	<i><u>Chapter11</u> Homework Assignments: Read chapter 11 and answer homework questions for chapter 11</i>
	<i>November 12-16</i>	<i>Cost of energy</i>	<i><u>Chapter12</u> Homework Assignments Read chapter 12and answer homework questions for chapter 12</i>
	<i>November 19-23</i>	<i>Environmental and health impacts</i>	<i>Chapter 13 Homework Assignments: Read chapter 13 and answer homework questions for chapter 13</i>
	<i>November 26-30</i>	<i>How to make fossil fuel more sustainable</i>	<i><u>Chapter14</u> Read chapter 14 and answer homework questions for chapter 14</i>
	<i>December 3-6</i>	<i><u>Classes End</u></i>	<i>Exam review</i>
	<i>December ?</i>	<i><u>Final Examination</u></i>	

Wishing you a wonderful semester at North Carolina Agricultural and Technical State University,

Dr. J. Emrani,
North Carolina Agricultural and State University
Division of University Studies
110 Hines Hall
1601 E. Market Street
Greensboro, North Carolina 27411
Telephone: (336) 4336718
Email: emrani@ncat.edu

Office Hours:
Monday – Friday 4:30 PM-5:50 PM

Note: If you need to talk to Dr. Emrani at any time during the semester, he will be available to meet with you at the times stated above. If you cannot see him at any of these times, please make an appointment. The best time to make an appointment is after class, or you may call him at the telephone number above. If you call him and he is not in, please leave your name, a brief message, and your telephone number and he will return your call. Alternatively, you may send us an email message at the above address.

