NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY
DIVISION OF UNIVERSITY STUDIES
CONTEMPORARY ISSUES IN THE USE OF RENEWABLE BIOBASED PRODUCTS

UNST-237

TR 6:00-7:45 PM RM 115

FALL 2009

INSTRUCTOR: DR. EMRANI, (336) 285-2247; emrani@ncat.edu

OVERVIEW: CONTEMPORARY ISSUES IN THE USE OF RENEWABLE BIOBASED PRODUCTS is an interdisciplinary course that utilizes subject matter from a variety of academic disciplines, to introduce students to bioenergy issues including critical analysis of supply, consumption, political, pollution, and social issues using scientific reasoning. In CONTEMPORARY ISSUES IN THE USE OF RENEWABLE BIOBASED PRODUCTS, students learn to critically look at the host of issues related to bio-based products during our time. They can employ the learned skills to solve both discipline specific problems as well as interdisciplinary problems.

OBJECTIVES: CONTEMPORARY ISSUES IN THE USE OF RENEWABLE BIOBASED PRODUCTS 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 biomass, conversion of biomass to different forms of fuels to replace petroleum based fuels, conversion of biomass to ethanol and other chemicals currently derived from petroleum, and biobased 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 biobased products issues.

REQUIRED TEXTS:

Biorenewable Resources: Engineering New Products from Agriculture Robert C. Brown Ames, IA:Iowa State University Press, 2003. 200 pp. ISBN: 0-8138-2263-7

COURSE REQUIREMENTS AND EVALUATION:

- **LEARNING GOALS:** Performance goals are listed below for each chapter. These goals represent what you are expected to learn in each chapter.

- **HOMEWORK** will be assigned weekly. Homework questions are listed in the UNST-237 homework folder located in the course documents in the Blackboard or at the end of each chapter in the textbook. Students are to write each question, answer the question and place the homework in the digital drop box of Blackboard for grading. Alternatively, students may be asked to provide multiple choice questions with answers about each topic. **QUIZZES , tests and Exams** will be given in class which may cover 3-4 chapters, or they may be assigned on the Webassign. These assignments must be completed by the deadline. Online assignments will be graded online and will count toward your final grade. **Since sufficient amount of time is allowed to complete these assignments, no extension will be considered.** Your instructor will give you instructions about web assignments during the first class period.

- Each student is required to complete a **project** on one of the topics covered in the textbook or other relevant topics. Only topics relevant to biobased products with data that are not older than two years will be accepted. A minimum of 45 days is assigned for the completion of the project. However, progress of the projects will be monitored by requesting that the students present their work for observation during this period. About one half of the work should be complete by the first deadline and all of it by the second deadline. Projects will be placed in the Digital box of Blackboard on or before deadline for submission.

- **ONE-HOUR EXAMINATIONS:** There will be **three (3)** examinations given during the semester. Examination dates are given in the exam schedule below.

- **FINAL EXAMINATION:** A **final examination** will be given during the final examination period. The **final exam will be COMPREHENSIVE,** therefore, you will be responsible for the mastery of all materials covered during the semester.

CALCULATORS: CALCULATORS ARE REQUIRED FOR EXAMS.

- **MAKE UP REQUESTS:** Permissible reasons for requesting make up of required work are described in the *Student Handbook*. NOTE: Other reasons for requesting make up of required course work are not acceptable.
  - **DOCUMENTATION REQUIRED FOR MAKE UP:** Please refer to the *Student Handbook* for acceptable verification documents.

  - **MAKE-UP POLICY FOR EXAMINATIONS:** *The make-up examination will be COMPREHENSIVE and the instructor may use one-half of your score on the final exam as your make-up exam score.* To be eligible for a make-up exam, an OFFICIAL EXCUSE for a missed exam must be presented to the instructor no later than one week after the missed exam. Permissible reasons for requesting make up of required work are described in the *Student Handbook*. NOTE: Other reasons for requesting make up are not acceptable.

- **EXAMINATION SCHEDULE:**

Tentative Examination Schedule:

Date	Time
Exam 1 – once chapters 1-3 are completed	Class period
Exam 2 - once chapters 4-6 are completed	Class period
Exam 3 - once chapters 7-10 are completed	Class period

Final Exam - (per university schedule)

***Point discrepancies on the homework, quizzes, and exams must be presented to the instructor within one week after grading is completed.**

- **Student Support Services:** If you have a documented disability for which to discuss academic accommodations, please contact the Office of Veteran and Disability Support Services at Room 005 Murphy Hall.

Prerequisites: There are no prerequisites for this class, other than an inquisitive mind. Basic knowledge of general and organic chemistry, math, engineering, and finance is helpful. Students should be warned that CONTEMPORARY ISSUES IN THE USE OF RENEWABLE BIOBASED PRODUCTS 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 [10%], and a final examination [30%] and project [10%]. 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-
89-87	B+
86-83	B
82-80	B-
79-77	C+

Percentage	Letter Grade
76-73	C
72-70	C-
69-67	D+
66-63	D
62-60	D-
59 and below	F

Grades will be posted in the Gradebook in the Blackboard

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.

University Studies Attendance Policy: 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. 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 can/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.

Students will automatically receive an "F" for missing beyond the equivalent of two weeks of class:

- M, W, F Schedule: Six (6) unexcused absences
- T, R Schedule: Four (4) unexcused absences
- 1-Class Per Week Schedule: Two (2) unexcused absences

At half the allotted absences (three (3) absences for M, W, F schedule; two (2) for T, R schedule; and one (1) for 1-class per week schedule), students are required to meet with their instructor(s) for a mandatory one-on-one conference concerning his/her performance in class.

Absence or tardiness is only excused for emergency situations. Students are responsible for submitting acceptable documentation for the excused absence within one week of the absence. Examples of acceptable documentation include:

- Written doctor's note specifically requesting an excused absence (with the specific time and date on the notification)
- Obituary or service notice
- An official written summons to court

- **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.
- **Calculator:** Students should have a scientific calculator to use for calculations. 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 or is disrespectful (inattention, personal attacks, etc.) is unacceptable. Differences of opinion should be met with intellectual curiosity and rigor rather than insult, contumely, or discord.

- **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 the course material.

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.
- 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 Hodgin Hall; 334-7855).

UNST-237 COURSE SCHEDULE

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

Section:	*Dates:*	*Outline of Topics to be Covered:*	*Readings*
ONE:	BASICS OF ENERGY ISSUES		
	August 17 - 21:	*Introduction*	Chapter 1 Homework Assignments: Read chapter 1 and answer questions of chapter 1 homework.
	August 24-28	*World Primary Energy Consumption*	Chapter 2 Homework Assignments: Read chapter 2 and answer homework questions for chapter 2
	Aug 31-September 4	*What do we use energy for?*	Chapter 3 Homework Assignments: Read chapter 3 and answer homework questions for chapter 3
	September 7-11	*Forms of energy*	Chapter4 Homework Assignments: Read chapter 4 and answer homework questions for chapter 4
	September 14	*Exam 1*	Ch 1,2,3,4
	September 15-18	*Fundamental Concepts in understanding biobased products*	Chapter 5 Homework Assignments: Read chapter 5 and answer homework questions for

Section:	*Dates:*	*Outline of Topics to be Covered:*	*Readings*
			chapter 5
	September 21-25	*Biorenewable Resource Base*	Chapter 6 Homework Assignments: Read chapter 6 and answer homework questions for chapter 6
TWO:	*INDIVIDUAL ENERGY SOURCES*		
	Sep 28- Oct 2	Production of Biorenewable Resources	Chapter7-part 1 Homework Assignments: Read chapter 7 and answer homework questions for chapter 7
	October 5	***Midterm Examination***	Ch 5,6,7-part 1
	October 6-9	*Products from Biorenewable Resources*	Chapter7, part 2 Homework Assignments: Read chapter 7 and answer homework questions for chapter 7
	October 12-16	*Conversion of Biorenewable Resources to Heat and Power*	Chapter 8 Read chapter 8 and answer homework questions for chapter 8
	October 19-23	*Processing of Biorenewable resources into Heat and Power*	Chapter 9 Homework Assignments: Read chapter 9 and answer homework questions for chapter 9
	October 26	***Exam 3***	*Chapters 7 (part 2) ,8,9*
	October 27-30	*Processing of Biorenewable resources into Heat and Power*	Chapter 10 Homework Assignments: Read chapter 10 and answer homework questions for chapter 10

THREE:	*SUSTAINABILITY OF SOURCES*		
	November 2-6	*Processing of Biorenewable resources into Natural Fibers*	Chapter11 Homework Assignments: Read chapter 11 and answer homework questions for chapter 11
	November 9-13	*Environmetal Impact of Bioeconomy*	Chapter12 Homework Assignments Read chapter 12and answer homework questions for chapter 12
	November 16-20	*Economics of Biorenewable Resources*	Chapter 13 Homework Assignments: Read chapter 13 and answer homework questions for chapter 13
	November 23-30	*Economics of Biorenewable Resources*	Chapter14 Read chapter 14 and answer homework questions for chapter 14
	December 1-4	***Classes End***	Exam review
	December 7-11	***Final Examination***	

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
350 New Science Building
Greensboro, North Carolina 27411
Telephone: *(336) 285-2247*
Email: *emrani@ncat.edu*

Office Hours:
Monday, Wednesday 4:30PM-5:30 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. 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.