



**BAEN - 625 Advances in Food Process Engineering**

**Fall 2018**

**Lecture:** MWF 8-8:50am; SCTS 215 (lectures will be recorded for DE students)

**Course Description and Prerequisites**

Application of engineering fundamentals to the design of novel/advanced food processing systems including food irradiation, advances in thermal process, food freezing, food dehydration

**Course Objectives**

The objectives of this course are to introduce to students the newest advances in food processing technology with emphasis on measurement and prediction of food material properties, predictive and kinetic modeling for food safety and food quality applications, and nonthermal processing technologies.

**Instructor Information**

Name                      Dr. Rosana Moreira; Dr. Elena Castell  
Telephone number      979-847-8794; 979-862-7645  
Email address            [rmoreira@tamu.edu](mailto:rmoreira@tamu.edu); [ecastell@tamu.edu](mailto:ecastell@tamu.edu)  
Office hours              Open door policy and via e-mail or Skype for Distance Education students  
Office location          310 Scoates Hall; 311 Scoates Hall

**Textbook and/or Resource Material**

No textbook is required for this class. Class notes, slides and other materials used in the course will be made available electronically through the *Elearning* course website. In addition, a link will give students access to recordings of all lectures for the semester.

**Grading Policies**

Each instructor will assign and grade their own assignments and exams. The grades earned for each component will be collated across instructors to determine a final grade for the course. Each instructor may have their own requirements as far as assignments and exams are concerned.

<b>Grading</b>	<b>Grading Scale</b>	
Assignments	25%	90 – 100: A
Project/Paper Presentation	25%	80 – 89: B
Exams	50%	70 – 79: C
		60 – 69: D
		Below 60: F

**Homework:** Late homework will not be accepted unless the student has a University excused absence for the class period in which homework was scheduled for completion. If any assignments are turned in outside of class, you should hand it directly to the instructor. Do not put assignments in the offices or slide them under the door of the instructor. Incomplete assignments will receive a zero grade.

***Instructors will work with those students enrolled in the course via Distance Education programs to determine appropriate assignment due dates.***

Excuses for emergency absences must be reported to the instructor as soon as possible, but not more than one week after the return to class. See University Rules for a full statement of the University attendance policy at <http://student-rules.tamu.edu/rule7.htm>.

**Exams** There will be at least three 50-minute in-class exams during the semester. Each exam will contain material covered by each instructor. Each instructor will decide whether to give exams. Make up exams will only be given for students with a certified medical excuse or prior instructor approval.

***Instructors will work with those students enrolled in the course via Distance Education programs to determine appropriate exam dates.***

***This course has been assigned three credit hours based upon the work represented by verifiable achievement of institutionally established learning outcomes, direct faculty instruction, and academically engaged time. (Federal Rule GEN 11-06)***

**Design Project and Paper:** Graduate students will write a 10-page research paper on a specified topic. A list of the references cited in the pages must be added and these pages will not count as one of the 10 pages. Please number all the pages.

The suggested format for the paper is: (a) Introduction (a brief description of the problem and its relevance to food packaging. (b) Design (a detailed discussion of the design, problem to solve, calculations, including citations) followed by the citation reference. (c) A list of References cited in the body of the paper.

The term paper will be graded as follows: (100% = 100 pts.)

1. Paper format	5%
2. Introduction	20%
3. Design (body of paper)	70%
4. References	5%

Students will give an oral Power Point presentation of their work during the last two weeks of classes. Presentations should last 10-15 minutes and should be sent via email to the class instructor the day before their presentation so that they could be loaded into the computer in the classroom prior to the class time. Presentations will be graded by the class instructor based on quality of the slides, technical content, and delivery. Peers will provide constructive criticism by filling out a survey after the presentations. ***Instructors will make arrangements with those students enrolled via the Distance Education program regarding delivery of the presentation.***

**Plagiarism:** As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you directly copy the work of another person and turn it in as your own, even if you have the permission of that person.

If you have any questions regarding plagiarism or cheating, please consult the Texas A&M University Student Rules, under the section Scholastic Dishonesty. These procedures will be followed and enforced in this course to maintain an environment of academic honesty.

## Course Topics, Calendar of Activities, Major Assignment Dates

Below is a tentative calendar with corresponding instructor. The schedule may be modified.

Week	Instructor		Notes	Contact Hours for DE
1	Castell		Engineering Properties of Foods	9
2	Castell		Engineering Properties of Foods	9
3	Castell		Engineering Properties of Foods	9
4	Castell		Properties prediction - modeling	9
5	Castell		Properties prediction - modeling	9
6	Castell		Properties prediction - modeling	9
7	Moreira		Nonthermal processes	9
8	Moreira		Nonthermal processes	9
9	Moreira		Nonthermal processes	9
10	Moreira		Food safety - modeling	9
11	Moreira		Food safety - modeling	9
12	Castell		Shelf life and kinetics	9
13	Castell		Shelf life and kinetics	9
14	Castell/Moreira		Student presentations	9
15	Castell/Moreira		Student presentations	9

**Total Hours 135**

### TENTATIVE CLASS TOPIC OUTLINE

#### **I –ENGINEERING PROPERTIES OF FOODS – Instructor: Castell**

1. Properties of relevance to food engineers and scientists
2. Measurement
3. Prediction and modeling

#### **II –FOOD SAFETY ENGINEERING – Instructor: Moreira**

1. Introduction
2. Thermal and non-thermal processes
3. Predictive modeling
4. Other

#### **III –OTHER RELEVANT TOPICS – Instructor: Castell**

1. Shelf life and kinetics
2. Modeling

***Student contact hours: 45 for face-to-face vs 135 hrs for distance delivery for a 3 credit hour course. The 135 hrs for distance delivery will consist of watching lecture recordings and other demonstrations, reading and homework assignments, online discussions and other Q&A forums, chatting with class instructor, and project discussions.***

## Other Pertinent Course Information

**University Regulations:** You are reminded of the following university regulations:

1. It is the responsibility of the student to be sure that course prerequisites are met (TAMU Reg 3).
2. Class attendance is an individual student responsibility (TAMU Reg 15).
3. Classroom behavior will be maintained to insure the rights of all students to learn (TAMU Reg. 40).
4. If you have a disability which may require alternate accommodations related to the requirements of this course, please inform the instructor and/or make an appointment with the instructor so that necessary alternative arrangements can be made.
5. It is the responsibility of students and instructors to help maintain scholastic integrity at the university by refusing to participate in or tolerate scholastic dishonesty (TAMU Reg 39).

## Americans with Disabilities Act (ADA)

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

## Academic Integrity

*For additional information please visit: <http://aggiehonor.tamu.edu>*

For many years, Aggies have followed a Code of Honor in an effort to unify the aims of all Aggies toward a high code of ethics and dignity. It functions as a symbol to all Aggies, promoting understanding and loyalty to truth and confidence in each other. Students should refer to the University policy on academic integrity found in the **Honor Council website**: All violations will be handled as specified by University Guidelines.

*Aggies do not lie, cheat or steal; nor do they tolerate those who do.*