

ABE 4413C– Postharvest Operations Engineering

Dr. William Pelletier (wpelletier@ufl.edu)

Catalog Description: 3 hours credit. Engineering principles and practices of postharvest operations for the maintenance of quality of agricultural products. Design of systems and facilities.

Prerequisites: ABE 3612C

Class Meeting Times: Wednesday and Friday 11:45 a.m. to 12:35 p.m. ROG 106

Monday 11:45 a.m. to 2:45 p.m. ROG 129

Martin Luther King, Jr Day, Monday, January 21th

Spring Break, March 4th to March 11th

Last Class, April 19th

Textbook(s) and/or other required materials None

References:

ASABE. 2013 ASABE Standards <http://elibrary.asabe.org/standards.asp> American Society of Agricultural and Biological Engineering. St Joseph, MI.

ASHRAE. 2013. ASHRAE Fundamentals Handbook. American Society of Heating Refrigeration and Air Conditioning Engineers. Atlanta, GA.

Brooker, D, F. W. Bakker-Arkema and C. W. Hall. 2001. Drying Cereal Grains and Oilseeds. Springer.

Henderson, S.M. and R.L. Perry. 1976. Agricultural Process Engineering, 3rd Edition. AVI.

Henderson, S.M., R.L. Perry, and J.H. Young. Principles of Process Engineering. 4th edition. 1997. ASAE.

Kader, A. A., Editor. 2002. Postharvest Technology of Horticultural Crops. Publication 3311, University of California Division of Agriculture and Natural Resources Press.. Davis, CA.

Loewer, O. J., T. C. Bridges and R. A. Bucklin. 1994. On-Farm Drying and Storage Systems. ASAE.

USDA. 2004. The Commercial Storage of Fruits, Vegetables, and Florist and Nursery Stocks, USDA Handbook 66, <http://www.ba.ars.usda.gov/hb66/contents.html> . United States Department of Agriculture, Washington, DC.

Course Objectives:

1. Develop student understanding of the engineering principles required to handle and store agricultural products after harvest.
2. Provide exposure to the agricultural process industries in order increase awareness of engineering design and operations associated with the industries.

Topics covered:

1. Psychrometrics
2. Drying
3. Fans
4. Materials Handling: Screw Conveyors, Bucket Elevators, Belts and Chutes, Pneumatic Conveying
5. Postharvest Handling of Fruits and Vegetables

Field & Fork Projects:

ABE 4413C was selected as one of the courses for the UF Field & Fork Fellows Program (<http://fieldandfork.ufl.edu/>). The program was established to provide University of Florida undergraduate students experiential learning opportunities within their coursework and to promote an interdisciplinary community of collaboration in sustainable agriculture and food systems.

Early this semester, teams will be formed and field-based projects will be defined and assigned according to the needs of the program and your interests. Each Field & Fork project will involve weekly team meetings, in-class presentations, written reports, multiple field visits and the upkeep of a team portfolio.

Grading:	Two Examinations	30%
	Homework Assignments/Projects	60%
	Attendance	10%

Grading Scale: A [90-100%], A- [87-90%], B+ [84-87%], B [80-84%], B- [77-80%], C+ [74-77%], C [70-74%], C- [67-70%], D+ [64-67%], D [60-64%], D- [< 60%]

Make-up Exam Policy: No make-up exams will be given except for valid medical reasons or unless prior arrangements have been made.

Honesty Policy – All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

Accommodation for Students with Disabilities – Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

UF Counseling Services – Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

Software Use – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

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