Postharvest Operations Engineering
ABE4413C Sections POST/WEB1
Class Periods: <u>MWF | Period 5 | 11:45 A.M. - 12:35 P.M.</u> & <u>M | Periods 6-7 | 12:50 P.M. - 2:45 P.M.</u>
Location: ROG 122/Online
Academic Term: Spring 2021

Instructor:
Dr. William Pelletier
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(352) 294-6701
Office Hours: Online/TBD
Office Location: 101 Frazier Rogers Hall

Teaching Assistants:
TBD
Office Hours: TBD
Office Location: TBD

Course Description
Engineering principles and practices of postharvest operations for the maintenance of quality of agricultural products. Design of systems and facilities. 3 Credits.

Course Pre-Requisite and Co-Requisites
ABE 3612C

Course Objectives
Students, upon completing this course, will be able to:
- Develop student understanding of the engineering principles required to handle and store agricultural products after harvest.
- Provide exposure to the agricultural process industries in order increase awareness of engineering design and operations associated with the industries.

The course presents topics related to fresh produce postharvest operations and integrates a major experiential learning project in collaboration with the Field & Fork Program or other local industry sponsors. The course provides an overview of fresh produce unique characteristics and covers topics including precooling operations, environmental conditions during harvest, handling, packaging, transport, retail operations, as well as important physiological aspect of fresh produce. Programing projects related to cooling and drying operations are also integrated in the curriculum.

This course will help students develop their ability to: 1. identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics, 2. apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors, 3. communicate effectively with a range of audiences, 5. function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives, 6. develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions and 7. acquire and apply new knowledge as needed, using appropriate learning strategies

The course will consist of three (3) lectures per week, one laboratory (used for projects), quizzes, projects and examinations.

Materials and Supply Fees
N/A

Professional Component (ABET):
This course contributes four (3) credit hours toward meeting the minimum 48 credit hours of Engineering Topics in the basic-level curriculum for the Bachelor of Science Degree in Biological Engineering.

Relation to Program Outcomes (ABET):

Outcome	Coverage[*]
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	Medium
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	Low
3. An ability to communicate effectively with a range of audiences	Low
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts	
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	High
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	High
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	High

[*]Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

Textbook
N/A

Online Course Recording
Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited.

Face-to-Face Course Policy in Response to COVID-19

We will have face-to-face instructional sessions to accomplish the student learning objectives of this course. In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.
- This course has been assigned a physical classroom with enough capacity to maintain physical distancing (6 feet between individuals) requirements. Please utilize designated seats and maintain appropriate spacing between students. Please do not move desks or stations.
- Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
- Follow your instructor's guidance on how to enter and exit the classroom. Practice physical distancing to the extent possible when entering and exiting the classroom.
- If you are experiencing COVID-19 symptoms, please use the UF Health screening system and follow the instructions on whether you are able to attend class. Click here for UF Health guidance on what to do if you have been exposed to or are experiencing COVID-19 symptoms.
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. Find more information in the university attendance policies

Attendance Policy, Class Expectations, and Make-Up Policy

- Attendance (on time) at lectures and laboratory sessions is expected from all students, at all times. A sign-in sheet and Zoom will be used and monitor attendance which accounts for 10% of your final grade. Students will be warned if they are late on several occasions. Following a second warning, late attendances will be counted as missed lectures.
- Specific directives will be provided for each assignment/project; they will be turned in through Canvas. Assignments/projects will be marked down for a sloppy presentation and, if excessive, they may be returned un-graded. Assignments/projects submitted late, before 4:00 P.M. on the day they were due, will be marked down by 10% of their total. Assignments/projects submitted late before 4:00 P.M. on the following day will be marked down by 50% of their total. No submission will be accepted after 4:00 P.M. on the following day.
- For online submissions, it is the student's responsibility to ensure that the correct file is uploaded on Canvas. A wrong submission will be penalized. If technical difficulties with Canvas were to occur, students can always email the file to wpelletier@ufl.edu.
- No make-up exams or quizzes will be given except for valid medical reasons or unless prior arrangements have been made.
- Cell phones must be silenced prior to the start of class.
- No food will be permitted.
- Excused absences must be consistent with university policies in the undergraduate catalog (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) and require appropriate documentation.

Course Schedule (subject to change)

Week	Start	End	Day	Topic	Week	Start	End	Day	Topic
Week 1	11-Jan	15-Jan	M	Course Introduction	Week 9	8-Mar	12-Mar	M	Transport and Distribution
			W	Introduction to Fresh Produce				W	Transport and Distribution
			F	Introduction to Fresh Produce				F	Transport and Distribution
Week 2	18-Jan	22-Jan	M	Martin Luther King Jr. Day	Week 10	15-Mar	19-Mar	M	Basic Physiological Concepts
			W	Introduction to Fresh Produce				W	Basic Physiological Concepts
			F	Introduction to Fresh Produce				F	Basic Physiological Concepts
Week 3	25-Jan	29-Jan	M	Introduction to Fresh Produce	Week 11	22-Mar	26-Mar	M	Basic Physiological Concepts
			W	Precooling Operations				W	Basic Physiological Concepts
			F	Precooling Operations				F	Review Moisture Content
Week 4	1-Feb	5-Feb	M	Precooling Operations	Week 12	29-Mar	2-Apr	M	Drying Operations
			W	Precooling Operations				W	Project 2 - Drying
			F	Precooling Operations				F	Project 2 - Drying
Week 5	8-Feb	12-Feb	M	Review Heat Transfer (Num. Meth.)	Week 13	5-Apr	9-Apr	M	Team Project
			W	Review Heat Transfer (Num. Meth.)				W	Team Project
			F	Review Programing				F	**Exam 2**
Week 6	15-Feb	19-Feb	M	Review Programing	Week 14	12-Apr	16-Apr	M	Term Project
			W	Project 1 – Cooling				W	Term Project
			F	Project 1 - Cooling				F	Term Project
Week 7	22-Feb	26-Feb	M	Review	Week 15	19-Apr	23-Apr	M	Term Project
			W	Transport and Distribution				W	Term Project
			F	**Exam 1**				F	-
Week 8	1-Mar	5-Mar	M	Transport and Distribution					
			W	Transport and Distribution					
			F	Transport and Distribution					

Evaluation of Grades

Assignment	Percentage of Final Grade
Exam 1 (Friday 02/26/2021[*])	15%
Exam 2 (Friday 04/09/2021[*])	15%
Programing Projects & Quizzes	20%
Term Project	40%
Attendance	10%
TOTAL	100%

*Date subject to change

Grading Policy

Percent	Grade	Grade Points
[90 - 100%]	A	4.00
[87 - 90%[	A-	3.67
[84 - 87%[	B+	3.33
[80 - 84%[	B	3.00
[77 - 80%[	B-	2.67
[74 - 77%[	C+	2.33
[70 - 74%[	C	2.00
[67 - 70%[	C-	1.67
[64 - 67%[	D+	1.33
[60 - 64%[	D	1.00
[57 - 60%[	D-	0.67
[0 - 57%[	E	0.00

More information on UF grading policy may be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/ . It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/ . Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/ . Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/ .

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:
• Your academic advisor or Graduate Program Coordinator
• Robin Bielling, Director of Human Resources, 352-392-0903, rbielling@eng.ufl.edu
• Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
• Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

Software Use

All faculty, staff, and students 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.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:
Health and Wellness
U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is

available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: http://www.counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling. https://www.crc.ufl.edu/.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus*: https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf.

On-Line Students Complaints*: http://www.distance.ufl.edu/student-complaint-process.

COVID-19 Safety Plan

Student Requirements
- Face Coverings Face coverings are to be supplied by students and worn throughout the duration of the face-to-face synchronous laboratory session on UF property. If the student forgets their face covering, then one may be provided by the instructor if available. If one is not available, then the student will be asked to leave.
- Social Distancing Social distancing must be observed throughout the duration of the face-to-face synchronous laboratory session - this is defined as maintaining a minimum physical distance of six (6) feet between the student, their peers, instructors, and technicians.
- Student Illness If a student does not feel well and/or is running a fever or displaying any other symptoms of illness, they are NOT to attend the face-to-face synchronous session. Please see contingency plans for student illness for more information.

Instructor Requirements

- Face Coverings Instructors and technicians will supply their own face coverings and wear them throughout the duration of the face-to-face synchronous laboratory session while on UF property. Social Distancing Social distancing must be observed throughout the duration of the face-to-face synchronous laboratory session. A minimum physical distance of six (6) feet will be maintained between all participants to the laboratory session. In instances where an instructor or laboratory technician must breach the social distancing barrier to assist with hands-on instruction, the student and instructor/technician should not pose a public health safety risk due to other public health requirements being employed (mandatory face coverings, hand washing/sanitizing, etc.). Breaching the social distance barrier will only be done when absolutely necessary and for the minimum period of time required to accomplish the learning objective.
- Instructor or Technician Illness If an instructor or technician does not feel well and/or is running a fever or displaying other symptoms of illness, they will not attend the face-to-face synchronous laboratory session. For more information, please see the instructor illness contingency plans.

Ingress/Egress Process

Students will be asked to follow the ABE safety protocol for safe traffic inside Frazier Rogers Hall.

Contingency Plans

- Students Illness If a student does not feel well and/or is running a fever or displaying any other symptoms of illness, they are NOT to attend the face-to-face synchronous laboratory session. In that case, they will be required to notify the instructors for alternative online instructional options that will include recorded laboratory demonstrations, instructor-provided data set, and alternative assignments to meet educational objectives.
- Instructor Illness If an instructor does not feel well and/or is running a fever or displaying other symptoms of illness, they will not attend the face-to-face synchronous laboratory session. In that case, alternative online instructional activities that will include recorded laboratory demonstrations, instructor-provided data set and alternative assignments to meet educational objectives will be used and administered by the teaching assistant.
- Cancellation of Face-to-Face Laboratory Sessions In the event face-to-face instruction is canceled by the University of Florida at any time during the semester, the use of contingency material developed prior to the start the semester will be used to accomplish learning objectives through an online teaching environment.