

Distribution and Transport Packaging

PKG4008 (15769)

Class Periods: MWF | Period 3 | 9:35 A.M. - 10:25 A.M.

Location: ROG 110

Academic Term: Spring 2024

Instructor:

Dr. William Pelletier

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(352) 294-6701

Office Hours: Online/TBD

Office Location: 101 Frazier Rogers Hall

Teaching Assistants:

N/A

Course Description

Studies containment, protection and preservation practices related to transporting and delivery of packages. 3 Credits.

Course Pre-Requisite and Co-Requisites

N/A

Course Objectives

Students, upon completing this course, will be able to:

- Understand the fundamentals of distribution and transport packaging.
- Understand the characteristics and hazards associated with the distribution environment.
- Understand the basics of packaging dynamics.
- Prepare a protective package using appropriate materials and testing equipment.

The course presents topics related to the technical aspects of a system approach to designing packaging that provides product protection and facilitates safe and cost-effective distribution. Topics include analyses of the distribution environment, transportation types, packaging dynamics and testing procedures. 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; 3. communicate effectively with a range of audiences; 4. 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. 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

The course will consist of three (3) lectures per week, quizzes, a project and examinations.

Materials and Supply Fees

N/A

Professional Component (ABET):

This course contributes three (3) credit hours toward meeting the minimum 48 credit hours of Engineering Topics in the basic-level curriculum for the Packaging Engineering concentration 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 | Low |
| 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 | |
| 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 | Low |
| 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 | |

*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

Attendance Policy, Class Expectations, and Make-Up Policy

- Attendance (on time) at lectures and laboratory sessions is expected from all students, always. A sign-in sheet will be used to 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, but, in most cases, homework assignments and project reports must be turned in through Canvas. Assignments and reports will be marked down for a sloppy presentation and, if excessive, they may be returned un-graded. Assignments submitted late, before 4:00 P.M. on the day they were due will be marked down by 10% of their total. Assignments submitted late before 4:00 P.M. on the following day will be marked down by 50% of their total. No assignments will be accepted after 4:00 P.M. on the following day.
- For online homework assignment 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.

Attendance Policy, Class Expectations, and Make-Up Policy (Continued)

- 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 1 | 8-Jan | 12-Jan | M | Syllabus | Week 9 | 4-Mar | 8-Mar | M | Mechanical Shocks |
| | | | W | Introduction | | | | W | Damage Boundary Curves |
| | | | F | Introduction | | | | F | Laboratory Demonstration 2 |
| Week 2 | 15-Jan | 19-Jan | M | Martin Luther King Jr. Day | Week 10 | 11-Mar | 15-Mar | M | |
| | | | W | Environment and Product Type | | | | W | Spring Break |
| | | | F | Environment and Product Type | | | | F | |
| Week 3 | 22-Jan | 26-Jan | M | Environment and Product Type | Week 11 | 18-Mar | 22-Mar | M | Damage Boundary Curves |
| | | | W | Environment and Product Type | | | | W | Cushioning |
| | | | F | Pharmaceutical Shippers | | | | F | Cushioning |
| Week 4 | 29-Jan | 2-Feb | M | Pharmaceutical Shippers | Week 12 | 25-Mar | 29-Mar | M | Performance Testing |
| | | | W | Pharmaceutical Shippers | | | | W | Industry Standards |
| | | | F | Introduction to Packaging Dynamics | | | | F | Industry Standards |
| Week 5 | 5-Feb | 9-Feb | M | Vibrations - Basic Concepts | Week 13 | 1-Apr | 5-Apr | M | Industry Standards |
| | | | W | Vibrations - Spring/Mass Systems | | | | W | Review |
| | | | F | Vibrations - Spring/Mass Systems | | | | F | Exam 2 |
| Week 6 | 12-Feb | 16-Feb | M | Review | Week 14 | 8-Apr | 12-Apr | M | Team Project |
| | | | W | Forced Vibrations | | | | W | Team Project |
| | | | F | Exam 1 | | | | F | Team Project |
| Week 7 | 19-Feb | 23-Feb | M | Forced Vibrations | Week 15 | 15-Apr | 19-Apr | M | Team Project |
| | | | W | Laboratory Demonstration 1 | | | | W | Team Project |
| | | | F | Damped Vibrations | | | | F | Team Project |
| Week 8 | 26-Feb | 1-Mar | M | Random Vibrations | Week 16 | 22-Apr | 26-Apr | M | Team Project |
| | | | W | Random Vibrations | | | | W | Team Project |
| | | | F | Mechanical Shocks | | | | F | - |

Evaluation of Grades

| Assignment | Percentage of Final Grade |
|---|---------------------------|
| Exam 1 (expected date: 02/16 at 9:35 A.M.) | 25% |
| Exam 2 (expected date: 04/05 at 9:35 A.M.) | 25% |
| Homework Assignments & Quizzes | 15% |
| Project & Presentation | 25% |
| Attendance | 10% |
| TOTAL | 100% |

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/>.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

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 Conduct Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. 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
- HWCHE Human Resources, (352) 392-0904, student-support-hr@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: <https://counseling.ufl.edu>, 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 Connection Center: Reitz Union, 392-1601. Career assistance and counseling; <https://career.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://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>; <https://care.dso.ufl.edu>.

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