PACKAGING

School of Packaging
College of Agriculture and Natural Resources

101 Principles of Packaging
Fall, Spring, Summer. 3-3-0 SA: PKG 210
Packaging systems, materials and forms and their relationship to the needs and wants of society.

221 Packaging with Glass and Metal
Fall, Spring. 3-3-0 P: (CEM 141 or CEM 151 or LB 171) and (PHY 231 or PHY 231C or PHY 183 or PHY 183B or LB 273) and (PKG 101 or concurrently) R: Open to sophomores or juniors or seniors in the School of Packaging Major. SA: PKG 320, PKG 325
Physical and chemical properties of glass and metals and their applications to packaging.

315 Packaging Decision Systems (W)
Fall, Spring. 3-2-2 P: (IMTH 132 or MTH 152H or LB 116 or MTH 124) and completion of Tier I writing requirement) and (PKG 221 or concurrently) R: Open to sophomores or juniors or seniors in the School of Packaging. SA: PKG 415
Application of computers to communicate, analyze and solve problems in the management, specification, production, and testing of packaging systems.

322 Packaging with Paper and Paperboard
Fall, Spring. 4-3-2 P: (PKG 221 or concurrently) and PKG 101) and (MTH 133 or MTH 153H or LB 119 or MTH 124) and (CEM 143 or CEM 251 or CEM 351) and (STT 200 or STT 201 or STT 315 or STT 351) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. SA: PKG 325
Physical and chemical properties, manufacture, conversion, and use of wood, paper, paperboard, and related components in packaging. Design, use, and evaluation of packages.

323 Packaging with Plastics
Fall, Spring. 4-3-2 P: (PKG 221 or concurrently) and PKG 101) and (MTH 133 or MTH 153H or LB 119 or MTH 124) and (CEM 143 or CEM 251 or CEM 351) and (STT 200 or STT 201 or STT 315 or STT 351) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. SA: PKG 320
Physical and chemical properties of plastics and their relationship to selection, design, manufacture, performance, and evaluation of packages.

330 Package Graphics
Fall, 3-3-0 P. PKG 221 R: Open to sophomores or juniors or seniors in the School of Packaging.
Position and importance of package graphics and structure in consumer packaging and marketing. Printing and decoration methods and technologies for paper, plastic and other materials. Preparation, production, application and economics of package graphics operations.

370 Packaging and the Environment
Spring. 3-3-0 P: Completion of Tier I Writing Requirement R: CEM 141 or CEM 151 or LB 171 R: Not open to freshmen or sophomores.

410 Distribution Packaging Dynamics
Fall, Spring. 4-3-2 P: PKG 322 and PKG 323 R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. SA: PKG 310 Not open to students with credit in PKG 803.
Identification and measurement of hazards in physical distribution. Methods of protection against climate, shock, vibration, and compression.

411 Package Development Technology
Fall, Spring. 3-2-2 P: (PKG 322 and PKG 323) and (PKG 315 or concurrently) or EGR 102) Development of consumer packaging utilizing current technology tools. Integration of package structure, graphics and performance. Examination and application of current practices in packaging development.

412 Package Processes
Fall, Spring. 4-3-2 P: (PKG 322 and PKG 323) and (PHY 232 or PHY 232C or PHY 184 or PHY 184B or PHY 294H or LB 274) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging.
Integrated study of packaging and production operations, quality control, and organization and control of machines. Interrelationship of products, packaging, machinery layout and efficiency, and quality issues.

444 Radio Frequency Identification (RFID) for Packaging
Fall, Spring. 3-2-2 P: PKG 322 and PKG 323 or approval of school Automatic identification tags, codes, and hardware and software for radio frequency identification (RFID). Business applications. Effect of products, materials, packaging, warehousing, supply chain, and quality on radio frequency equipment and readability.

445 Robotics in Packaging
Spring. 2-0-0 P: MTH 124 or MTH 132 or LB 118 or MTH 152H SA: PKG 440
Robotic systems. Configurations, components, drive mechanisms, control and feedback, and safety. Line inspection, vision systems, guided vehicle, and storage retrieval systems.

450 Automotive and Industrial Packaging
Fall, 2-0-0 P: MTH 124 or MTH 132 or LB 118 or MTH 152H SA: PKG 440
Returnable and expendable packaging for part shipments to assembly plants, cost justification, service parts packaging, logistical systems, and material handling.

452 Medical Packaging
Fall, 4-3-2 P: PKG 322 or PKG 323 Special requirements for packaging pharmaceuticals and medical devices. Evaluation of package systems and packaging procedures.

453 Food Packaging
Spring. 3-3-1 P: PKG 322 and PKG 323 R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging.
Food package systems related to specific products and processes. Product composition: problems and packaging solutions, shelf life considerations, and packaging lines.

460 Distribution Packaging and Performance Testing
Fall, Spring. 3-2-2 P: PKG 410 R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging.
Interrelationships, between packaging, and distribution systems. Transportation, material handling, warehousing. Logistics and management systems. Performance testing and industry practices. Packaging container design and testing.

475 Packaging Economics
Fall, Spring. 3-3-0 R: EC 201 or EC 202 Economic issues in packaging as they relate to policies of the firm and of government. Relationships between economic policy and societal issues.

477 Hazardous Materials Packaging
Summer. 3-3-0 R: PKG 322 and PKG 323 R: Open to juniors or seniors or graduate students.

480 Packaging Laws and Regulations
Spring. 3-3-0 R: PKG 322 or PKG 323 R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging.
History and development of packaging laws and regulations. Relationships among law, government regulation and commercial regulation. Effect of current laws and regulations on packaging.

485 Packaging Development (W)
Fall, Spring, 4-4-0 P: (PKG 410) and completion of Tier I writing requirement) and (PKG 315 or EGR 102) and PKG 432 R: Open to seniors or graduate students in the School of Packaging.
Package development including selection, design and implementation of package systems for protection, distribution, merchandising, use and disposal.

490 Directed Studies in Packaging Problems
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: PKG 322 and PKG 323 R: Open to sophomores or seniors or graduate students. Approval of department; application required.
Development of solutions to specific packaging problems. Supervised individual study.

491 Special Topics
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. Selected topics of current interest.

492 Senior Seminar
Spring. 2-0-0 R: Open to seniors in the Packaging major.
Seminar on current packaging issues, business organization and operations, and accepted practices in a corporate environment.
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<th>Course Number</th>
<th>Course Title</th>
<th>Description</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>493</td>
<td>Professional Internship in Packaging</td>
<td>Fall, Spring, Summer. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for any or all of these courses: ABM 493, ANR 493, ANS 493, CMA 493, CS 493, CSUS 493, EEP 493, FIM 493, FSC 493, FWS 493, HRT 493, PKG 493, and PLP 493. (PKG 322 and PKG 323) and (PKG 315 or EGR 102): Open to juniors or seniors or graduate students in the School of Packaging. Approval of department; application required. Supervised professional experience in the field of packaging offered through corporations and other businesses throughout the U.S.</td>
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<td>801</td>
<td>Packaging Materials</td>
<td>Fall. 4(4-0) R: Approval of department. Physical and chemical properties of packaging materials; design, manufacture, performance and evaluation of packages.</td>
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<td>803</td>
<td>Packaging Distribution and Dynamics</td>
<td>Spring. 2(2-0) R: Approval of department. SA: PKG 802. Transportation environment, distribution packaging design and testing.</td>
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<td>804</td>
<td>Packaging Processes</td>
<td>Spring. 2(2-0) R: Approval of department. SA: PKG 802. Integrated study of packaging and production operations, quality control, organization and control of machines. Interrelationship of products, packaging, machinery layout and efficiency, and quality issues.</td>
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<td>814</td>
<td>Packaging for Food Safety</td>
<td>Summer. 3 credits. Interdepartmental with Veterinary Medicine. Administered by Veterinary Medicine. RB: Enrollment in graduate program in related field; R: Open to masters students in the Food Safety major and open to graduate students in the Packaging major or approval of college. Current issues in packaging and food safety.</td>
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<td>815</td>
<td>Permeability and Shelf Life</td>
<td>Spring. 3(2-2) RB: MTH 124Q and MTH 132 and PKG 322 and PKG 323. Relationship between the storage life of packaged food and pharmaceutical products and the gas, moisture, and organic vapor permeability of packages in various environments.</td>
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<td>817</td>
<td>Instruments for Analysis of Packaging Materials</td>
<td>Fall of even years. 4(3-2) RB: PKG 322 and PKG 323. Analytical methods for packaging including spectrophotometry and chromatography. Material identification and characterization. Migration and permeation measurements.</td>
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<td>826</td>
<td>Principles of Scholarship: Integrity, Ethics and Research</td>
<td>Fall. 2(2-0) Interdepartmental with Agriculture and Natural Resources. Administered by Packaging. Principles, considerations, expectations and culture of professional scholarship.</td>
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