410 Distribution Packaging Dynamics
Fall, Spring. 3(3-0) P: PKG 322 and PKG 323 R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging. SA: PKG 310

411 Package Development Technology
Fall, Spring. 3(2-2) P: PKG 322 and PKG 323 and (PKG 315 or concurrently) SA: PKG 320, PKG 325

432 Packaging Processes
Fall, Spring. 4(3-2) P: (PKG 322 and PKG 323) and (PHY 232 or PHY 232C or PHY 184 or PHY 241B or PHY 184B or PHY 294L or PHY 274) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging.

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.

455 Food Packaging
Spring. 3(3-1) P: PKG 322 and PKG 323 R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging.

460 Distribution Packaging and Performance Testing
Spring. 3(2-2) P: PKG 410 R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging.

475 Packaging Economics
Fall, Summer. 3(3-0) RB: EC 201 or EC 202

491 Special Topics
Fall, Spring. 4(4-0) P: (PKG 410 and PKG 315 and PKG 432) and completion of Tier I writing requirement R: Open to seniors or juniors or seniors or graduate students of the School of Packaging. RB: PKG 322 or PKG 323 R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging.

492 Senior Seminar
Fall, Spring. 1(2-0) R: Open to seniors in the Packaging major.

910 Principles of Packaging
Fall, Spring, Summer. 3(3-0) SA: PKG 210

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) SA: PKG 320, PKG 325

315 Packaging Decision Systems (W)
Fall, Spring. 3(2-2) P: (MTH 116 or MTH 114 or MTH 124 or MTH 152H or LB 118) and completion of Tier I writing requirement R: Open to sophomores or juniors or seniors in the School of Packaging. SA: PKG 415

322 Packaging with Paper and Paperboard
Fall, Spring. 4(3-2) P: (PKG 221 or concurrently) and PKG 101 and (MTH 124 or MTH 132 or MTH 152H or LB 118) 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

323 Packaging with Plastics
Fall, Spring. 4(3-2) P: (PKG 221 or concurrently) and PKG 101 and (CEM 143 or CEM 251 or CEM 351) and (STT 200 or STT 201 or STT 315 or STT 351) and (MTH 124 or MTH 132 or MTH 152H or LB 118) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. SA: PKG 320

330 Package Graphics
Fall. 3(3-0) P: PKG 221 R: Open to sophomores or juniors or seniors in the School of Packaging.

350 Packaging and the Environment
Spring, 3(3-0) P: Completion of Tier I writing requirement. RB: CEM 141 or CEM 151 or LBS 164 R: Not open to freshmen or sophomores.


390 Food Packaging Systems Related to Specific Products and Processes
Spring. 3(3-0) P: PKG 322 and PKG 323 R: Open only to sophomores or juniors or seniors or graduate students in the School of Packaging.

400 Special Requirements for Packaging Pharmaceutical Products
Fall, Spring. 1(2-0) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. Approval of department; application required.

410 Special Requirements for Packaging Medical Devices
Fall, Spring. 1(2-0) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. Approval of department; application required.

420 Special Requirements for Packaging Veterinary Products
Fall, Spring. 1(2-0) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. Approval of department; application required.

430 Special Requirements for Packaging Plant Products
Fall, Spring. 1(2-0) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. Approval of department; application required.

440 Special Requirements for Packaging Animal Products
Fall, Spring. 1(2-0) R: Open to sophomores or juniors or seniors or graduate students in the School of Packaging. Approval of department; application required.
493 Professional Internship in Packaging
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, AEE 493, ANR 493, ANS 493, CMP 493, CSS 493, EEP 493, ESA 493, FIM 493, FSC 493, FW 493, HRT 493, PKG 493, PLP 493, and PRR 493. P: PKG 322 and PKG 323 and PKG 315 R: Approval of department; application required. Supervised professional experience in the field of packaging offered through corporations and other businesses throughout the U.S.

301 Packaging Materials
Fall. 4(4-0) R: Approval of department. Physical and chemical properties of packaging materials; design, manufacture, performance and evaluation of packages.

803 Packaging Distribution and Dynamics
Spring. 2(2-0) R: Approval of department. SA, PKG 802. Transportation environment, distribution packaging design and testing.

304 Packaging Processes
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.

305 Advanced Packaging Dynamics

814 Packaging for Food Safety
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.

815 Permeability and Shelf Life
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 packaging in various environments.

817 Instruments for Analysis of Packaging Materials
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.

826 Principles of Scholarship: Integrity, Ethics and Research
Fall. 2(2-0) Interdepartmental with Agriculture and Natural Resources. Administered by Packaging. Principles, considerations, expectations and culture of professional scholarship.

827 Polymeric Packaging Materials
Fall. 3(3-0) RB: PKG 323 or PKG 801 SA: PKG 825. Physical and chemical properties of polymeric materials and structures used in packaging. Relationship of properties to performance.

828 Processing and Applications of Packaging Plastics
Spring. 3(3-0) Processing of packaging plastics: extrusion, coating, film, containers. Effects of processing variables on morphology and performance.

829 Packaging Plastics Laboratory
Fall. 1(0-2) Not open to students with credit in PKG 825. Structure versus property relationships and plastics processing.

840 Anti-Counterfeit Strategy and Product Protection
Summer. 3(3-0) Interdepartmental with Criminal Justice and Veterinary Medicine. Administered by Veterinary Medicine. R: Open to graduate students in the School of Criminal Justice or in the School of Packaging or in the Food Safety major or approval of department. Theory and applied techniques for anti-counterfeit strategies and product protection for food and consumer products.

850 Packaging Value Chain
Fall. 3(3-0) Packaging value chain from raw material supplier to retailers in context of meeting current needs. Global exploration of value chain strategies to increase innovation, sustainability, cost savings, quality, organizational agility, responsiveness.

875 Stability and Recyclability of Packaging Materials
Fall of odd years. 3(3-0) RB: PKG 322 and PKG 323. Interactions between packaging materials and environments: corrosion, degradation, stabilization, and recycling. Impacts of packaging disposal.

888 Master’s Project
Fall, Spring. Summer. 2 credits. R: Open only to masters students in the School of Packaging. Approval of school, application required. Master's degree Plan B project. Completion of a project related to packaging issues.

890 Independent Study in Packaging
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to doctoral students in the School of Packaging. Special investigations of unique packaging problems.

891 Selected Topics
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open only to graduate students in the School of Packaging. Selected topics of interest to graduate packaging students.

899 Master's Thesis Research
Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to masters students in the Packaging major. Master's thesis research.

985 Analytical Solutions to Packaging Design
Spring of even years. 3(3-0) RB: PKG 801 R: Open only to graduate students in the College of Agriculture and Natural Resources or College of Engineering or College of Natural Science. Approval of department; application required. Analytical and quantitative techniques for packaging design and evaluation.

990 Independent Study in Packaging
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to Ph.D. students in the School of Packaging. Approval of department; application required. Special investigations of unique packaging problems.

992 Packaging Seminar
Fall. 1(2-0) A student may earn a maximum of 3 credits in all enrollments for this course. R: Open only to graduate students in the School of Packaging. Presentations of detailed studies on specialized aspects of packaging.

999 Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 50 credits in all enrollments for this course. R: Open only to doctoral students in the School of Packaging. Doctoral dissertation research.