### 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.

### Introductory Packaging Seminar
- Fall, Spring. 2(2-0) P: PKG 101 or concurrently R: Open to undergraduate students in the Packaging Major.
- Packaging career choices in science, management and engineering. Creativity in packaging designs and career decisions.

### Packaging with Glass and Metal
- Fall, Spring. 2(2-0) 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 102 or concurrently) R: Open to sophomores or juniors or seniors in the Packaging Major. SA: PKG 320, PKG 325
- Physical and chemical properties of glass and metals and their applications to packaging.

### Packaging Decision Systems
- Fall, Spring. 3(2-2) P: (MTH 132 or MTH 152H or LB 118) and (PKG 221 or concurrently) R: Open to sophomores or juniors or seniors in the School of Packaging. SA: PKG 415
- Communication, analysis, and problem solving in the management, specification, production, sustainability, economics and testing of packaging.

### 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.

### 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) and (CEM 143 or CEM 251 or CEM 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.

### 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.

### 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 technology, structures, graphics and performance. Examination and application of current practices in packaging development.

### Packaging for Fast-Moving Consumer Goods
- Fall, Spring. 3(3-0) P: PKG 315 and PKG 322 and PKG 323 R: Open to juniors or seniors or graduate students in the School of Packaging. SA: PKG 330
- Package graphics and structure in fast-moving consumer goods packaging and marketing. Consumer experience, printing and decoration. Preparation, production, and economics of packaging graphics.

### Packaging Processes
- Fall, Spring. 3(3-0) P: (PKG 322 and PKG 323) and (PHY 232 or PHY 232C or PHY 184 or PHY 184B or PHY 284H 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 machinery. Interrelationship of products, packaging machinery layout and efficiency, and quality issues.

### 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.

### Robotics in Packaging
- Fall, Spring. 3(2-2) 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.

### Automotive and Industrial Packaging
- Fall, Spring. 3(2-2) 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.

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

### Food Packaging
- Fall, 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.

### Packaging Value Chain
- Fall, Summer. 3(3-0) P: PKG 322 and PKG 323 and PKG 432 R: Open to students in the School of Packaging.
- Integrated identification and measurement of packaging supply chain components, from material extraction through processing, shipping, warehousing, sales and disposal. Integration of information technologies. Application and interrelationship of costs and financial aspects to the decision-making processes.

### Packaging Sustainability
- Spring. 3(3-0) P: PKG 315 and PKG 322 and PKG 323 R: Open to juniors or seniors or graduate students in the School of Packaging. SA: PKG 370

### Packaging Economics
- Fall. 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.

### Hazardous Materials Packaging
- Summer. 3(3-0) R: PKG 315 and PKG 322 and PKG 323 R: Open to juniors or seniors or graduate students.

### 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.

### Packaging Development
- Fall, Spring. 3(3-0) P: (PKG 410 and PKG 432) and (PKG 315 or EGR 102) and (PKG 411 or concurrently) 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.

### Packaging Senior Capstone (W)
- Fall, Spring. 3(3-0) P: (PKG 485) and completion of Tier I writing requirement R: Open to undergraduate students in the Packaging Major.
- Development of a team-based packaging design project serving specific product and market needs. In depth team report of feasibility, specifications, sourcing, marketing, value-chain economics, and sustainability.

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

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

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, ANR 493, ANS 493, CMP 493, CSS 493, CSUS 493, EEP 493, FIM 493, FSC 493, FW 493, HRT 493, PKG 493, and PLP 493 P: (PKG 322 and PKG 323) and (PKG 315 or EGR 102) R: 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.

Packaging Materials
Fall. 4(4-0) R: Approval of department. An integrated study of packaging and production operations, quality control, organization and control of machines. Properties and performance of packaging materials.

Packaging Distribution and Dynamics
Spring. 2(2-0) R: Approval of department. An integrated study of packaging and production operations, quality control, organization and control of machines. Interrelationships of products, packaging, machinery layout and efficiency, and quality issues.

Advanced Packaging Dynamics
Spring. 3(2-2) R: PKG 410 R: Open to students in the Packaging major.

Packaging for Food Safety
Summer. 3 credits. An interdisciplinary study of Veterinary Medicine. An interdisciplinary study of Veterinary Medicine. Enrolled in graduate program in related field. R: Open to master's degree in the Food Safety major or open to graduate students in the Packaging major or approval of college.

Permeability and Shell Life
Spring. 3(2-2) R: MTH 124Q and MTH 132 and PKG 322 and PKG 323 R: Open to graduate students in the Packaging major.

Instruments for Analysis of Packaging Materials
Fall of even years. 4(3-2) R: PKG 322 and PKG 323 R: Open to graduate students in the School of Packaging. Approval of department; application required.

Polymeric Packaging Materials
Fall. 4(3-2) R: Graduate students with chemistry, physics, and mathematics background, SA: PKG 827 R: Open to graduate students in the School of Packaging. Approval of department; application required.

Anti-Counterfeit Strategy and Product Protection
Summer. 3(3-0) R: PKG 322 and PKG 323 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.

Packaging Value Chain
Fall. 3(3-0) R: Open to graduate students in the School of Packaging. Presentations of detailed studies on specialized aspects of packaging.

Research Methods
Fall. 3(3-0) R: Open to graduate students in the School of Packaging. Doctoral dissertation research.

Master's Thesis Research
Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 9 credits in all enrollments for this course. R: Open only to master's students in the Packaging major. Master's thesis research.

Analytical Solutions to Packaging Design
Spring of even years. 3(3-0) R: 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.

Packaging Seminar
Fall. 1(2-0) R: Open to graduate students in the School of Packaging. Special investigations of unique packaging problems.

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.

Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Open to doctoral students in the School of Packaging. Doctoral dissertation research.