



Packaging

1. University Requirements: (23)

| | |
|---|---|
| Writing, Rhetoric and American Cultures (WRA) | 4 |
| Integrative Studies in Humanities (IAH) | 8 |
| IAH 201-210 and IAH 211 or higher | |
| Integrative Studies in Social Sciences (ISS) | 8 |
| ISS 2XX and ISS 3XX | |
| Bioscience (one of the following): | |
| FSC 342, MMG 201 | 3 |

2. Major Requirements: (61-62)

a. STEM Core Requirement

Complete all the following courses: (22)

| | | |
|----------|-----------------------------|---|
| CEM 141* | General Chemistry | 4 |
| CEM 161 | Chemistry Laboratory I | 1 |
| CEM 143 | Survey of Organic Chemistry | 4 |
| MTH 132 | Calculus I | 3 |
| MTH 133* | Calculus II | 4 |
| PHY 231* | Introductory Physics I | 3 |
| PHY 232 | Introductory Physics II | 3 |

*Upper School Admission Requirement

b. Packaging Core Requirement

Complete all the following courses: (36)

| | | |
|---------|----------------------------------|---|
| PKG 101 | Principles of Packaging | 3 |
| PKG 102 | Introductory Packaging Seminar | 2 |
| PKG 221 | Packaging with Glass and Metal | 2 |
| PKG 315 | Packaging Decision Systems | 3 |
| PKG 322 | Packaging - Paper & Paperboard | 4 |
| PKG 323 | Packaging with Plastics | 4 |
| PKG 410 | Distribution Packaging Dynamic | 4 |
| PKG 411 | Package Development Technology | 3 |
| PKG 432 | Packaging Processes | 4 |
| PKG 465 | Packaging Value Chain | 3 |
| PKG 485 | Packaging Development (Capstone) | 4 |

c. Statistics Requirement

Select one of the following courses: (3-4)

| | | |
|---------|---|---|
| STT 200 | Statistical Methods | 3 |
| STT 201 | Statistical Methods | 4 |
| STT 315 | Introduction to Probability and Statistics for Business | 3 |
| STT 351 | Probability and Statistics for Engineering | 3 |

d. Business Focus Requirement

Select one of the following courses: (3)

| | | |
|---------|-----------------------------------|---|
| MKT 327 | Introduction to Marketing | 3 |
| SCM 304 | Survey of Supply Chain Management | 3 |

e. Economics Requirement

Select one of the following courses: (3)

| | | |
|--------|--------------------------------|---|
| EC 201 | Introduction to Microeconomics | 3 |
| EC 202 | Introduction to Macroeconomics | 3 |

Packaging Electives

Nine credits in Packaging electives are required and earned through coursework, participation in the internship or overseas study programs.

f. Completion of electives in packaging: (9)

| | | |
|---------|---|-----|
| PKG 421 | Virtual Design and Prototyping | 3 |
| PKG 430 | Packaging for Fast-Moving Consumer Goods | 3 |
| PKG 444 | Radio Frequency Identification (RFID) for Packaging | 3 |
| PKG 450 | Automotive Packaging | 3 |
| PKG 452 | Medical Packaging | 4 |
| PKG 455 | Food Packaging | 4 |
| PKG 456 | Packaging and Shelf Life of Perishable Food | 3 |
| PKG 470 | Packaging Sustainability | 3 |
| PKG 477 | Hazardous Materials Packaging | 3 |
| PKG 480 | Packaging Laws and Regulations | 3 |
| PKG 490 | Directed Studies in Packaging Problems | 3 |
| PKG 491 | Special Topics | 1-4 |
| PKG 493 | Professional Internship in Packaging | 3 |
| PKG 499 | Undergraduate Research | 1-4 |

Core Curriculum

All packaging majors must complete a core curriculum consisting of 10 packaging courses which accounts for 33 of the 120 credits required for the degree and includes more than 100 hours of practical laboratory experience.

Core courses include studies in the following areas:

- Technical principles for packaging
- Packaging career preparation and skills
- Materials (glass, plastic, paper, and metals in packaging)
- Computer applications
- Packaging processes & systems
- Distribution dynamics
- Design and prototyping
- Life Cycle Analysis & Environmental impacts
- Economic Factors of Packaging

Admissions Requirements

Admission to the upper division requires that the student has completed the following courses **with a minimum of a 2.0 in each course AND 3.0 cumulative GPA over all coursework completed at MSU.**

- CEM 141
- PHY 231
- MTH 133

Students who have already declared their major preference as Packaging prior to reaching 56 credits will be automatically reviewed for admission; there is no application required. For students outside the packaging major, please contact the Packaging Advisor for admission review.



Packaging- Sample Plan

| FRESHMAN | | | | | |
|----------------------|-----------|------------------------|-----------|------------------------|----------|
| FALL | | SPRING | | SUMMER | |
| CEM 141 | 4 | PHY 231 | 3 | ISS 2XX or IAH 201-210 | 4 |
| CEM 161 | 1 | MTH 133 | 4 | | |
| MTH 132 | 3 | PKG 102 | 2 | | |
| PKG 101 | 3 | ISS 2XX or IAH 201-210 | 4 | | |
| WRA 101 | 4 | EC 201 or 202 | 3 | | |
| TOTAL CREDITS | 15 | TOTAL CREDITS | 16 | TOTAL CREDITS | 4 |

| SOPHOMORE | | | | | |
|----------------------|-----------|------------------------------|-----------|----------------------|----------|
| FALL | | SPRING | | SUMMER | |
| CEM 143 | 4 | PKG 322 | 4 | Free Elective/ Minor | 3 |
| STT 200 | 3 | PKG 323 | 4 | | |
| PKG 221 | 2 | PHY 232 | 3 | | |
| PKG 315 | 3 | ISS 3xx OR IAH 211 or higher | 4 | | |
| Free Elective/MINOR | 3 | | | | |
| TOTAL CREDITS | 15 | TOTAL CREDITS | 15 | TOTAL CREDITS | 3 |

| JUNIOR | | | | | |
|----------------------|----------|------------------------------|-----------|----------------------|----------|
| FALL | | SPRING | | SUMMER | |
| PKG 493 | 3 | PKG 410 | 4 | PKG elective | 3 |
| (INTERNSHIP) | | ISS 3xx OR IAH 211 or higher | 4 | | |
| | | PKG 432 | 4 | | |
| | | MKT 327/SCM 304 | 3 | | |
| | | | | | |
| TOTAL CREDITS | 3 | TOTAL CREDITS | 15 | TOTAL CREDITS | 3 |

| SENIOR | | | |
|----------------------|-----------|----------------------|-----------|
| FALL | | SPRING | |
| Free Elective/ Minor | 3 | PKG 485 | 4 |
| PKG 465 | 3 | PKG elective | 3 |
| FSC 342 | 3 | Free Elective/ Minor | 3 |
| PKG 411 | 3 | Free Elective/ Minor | 3 |
| Free Elective/ Minor | 3 | Free Elective/ Minor | 3 |
| | | | |
| TOTAL CREDITS | 15 | TOTAL CREDITS | 16 |

TOTAL CREDITS TO GRADUATE: 120



Competency Programmatic Learning Outcomes

The Packaging (PKG) major is a hands-on undergraduate BS degree program in the School of Packaging within the MSU College of Agriculture and Natural Resources. The program is based on competency-based programmatic learning outcomes (CPLOs) and the MSU learning goals (MSU-LGs) mapped to each individual class learning outcomes (CLOs). CLOs, CPLOs, and MSU-LG are assessed in each core and elective PKG courses.

1. Evaluate packaging systems

Evaluate and choose materials, packaging systems, and components by applying and interpreting scientific tests, writing and interpreting specifications, and using and recommending appropriate test protocols.

2. Analyze tradeoffs in packaging systems

Analyze and prioritize product, packaging line, distribution system, environmental footprint, marketing, financial implications, user needs and additional tradeoffs to create and/or to provide innovative, efficient, sustainable, legally compliant and cost-effective packaging systems.

3. Design innovative and sustainable packaging systems

Design innovative and sustainable solutions to package and packaging systems related problems and future needs.

4. Manage projects in diverse teams

Formulate and manage projects with the ability to work in diverse teams to achieve common and successful outcomes.

5. Communicate effectively considering diverse audiences

Communicate effectively considering diverse audiences in a variety of situations with a variety of media.

6. Professional and ethical manner

Conduct oneself in a professional and ethical manner, exhibiting values such as civility and respect for others, honesty, integrity, accountability, maintenance of confidentiality, etc.