# PACKAGING SYSTEMS AND DESIGN MAJOR

## Program Curriculum

| Code | Title | Credits |
|---|---|---|
| **Degree Core Requirements** | | |
| SBIO 2004 | Computer-Aided Design in Packaging | 3 |
| SBIO 2104 | Principles of Packaging | 3 |
| SBIO 3124 | Paper and Paperboard Packaging | 3 |
| SBIO 3224 | Packaging Distribution Systems | 3 |
| SBIO 3284 | Packaging Polymers and Production | 3 |
| SBIO 4024 | Packaging Design for Global Distribution | 3 |
| SBIO 4054 | Packaging Systems Design Practicum | 3 |
| Subtotal | | 21 |
| **Major Requirements** | | |
| *Packaging Engineering* | | |
| SBIO 4224 | Industrial Packaging Systems | 3 |
| SBIO 3314 | Mechanics of Sustainable Biomaterials and Packaging (Packaging Applications) | 4 |
| Subtotal | | 7 |
| *Packaging Applications* | | |
| SBIO 4214 | Food and Health Care Packaging | 3 |
| SBIO 3244 | Packaging Machinery and Production Systems | 3 |
| Subtotal | | 6 |
| *Sustainability* | | |
| SBIO 3464 | Sustainable Operations Management | 3 |
| SBIO 4164 | Sustainability Performance and Assessments | 3 |
| SBIO 2504 | Circular Economy Analytics for Sustainable Systems | 3 |
| Subtotal | | 9 |
| *Chemical and Physical Sciences* | | |
| BIOL 1115 | Principles of Biology Laboratory | 1 |
| PHYS 2205 | General Physics | 3 |
| CHEM 1036 | General Chemistry | 3 |
| CHEM 2514 | Survey of Organic Chemistry | 3 |
| Subtotal | | 10 |
| *Specialized Packaging Topic* | | |
| Select 2 from the following: | | 6 |
| SBIO 2154 | Packaging and Culture | |
| SBIO 2214 | Design Fundamentals for Packaging | |
| SBIO 3104 | Packaging Design Applications | |
| *Packaging Experiential Learning* | | |
| Select one of the following: | | 3 |
| SBIO 3964 | Field Study | |
| SBIO 4994 or SBIO 3994 | Undergraduate Research<br>Undergraduate Research | |
| XXXX 3954 | Study Abroad | |
| XXXX 4954 | Study Abroad | |
| Subtotal | | 9 |
| **Free Electives** | | |
| Select remaining credit hours to fulfill remaining credits required for graduation. | | 12 |
| Subtotal | | 12 |
| **Pathways to General Education** | | |
| *Pathways Concept 1 - Discourse* | | |
| ENGL 1105 or COMM 1015 | First-Year Writing<br>Communication Skills | 3 |
| ENGL 1106 or COMM 1016 | First-Year Writing<br>Communication Skills | 3 |
| ENGL 3764 | Technical Writing (1A) | 3 |
| *Pathways Concept 2 - Critical Thinking in the Humanities* | | |
| Select six credits in Pathway 2 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G02) | | 6 |
| *Pathways Concept 3 - Reasoning in the Social Sciences* | | |
| ECON 2005 | Principles of Economics | 3 |
| ECON 2006 | Principles of Economics | 3 |
| *Pathways Concept 4 - Reasoning in the Natural Sciences* | | |
| BIOL 1105 | Principles of Biology | 3 |
| CHEM 1035 | General Chemistry | 3 |
| CHEM 1045 | General Chemistry Laboratory | 1 |
| *Pathways Concept 5 - Quantitative and Computational Thinking* | | |
| STAT 3604 | Statistics for Social Science | 3 |
| MATH 1025 | Elementary Calculus | 3 |
| MATH 1026 | Elementary Calculus | 3 |
| *Pathways Concept 6 - Critique and Practice in Design and the Arts* | | |
| Select three credits in Pathway 6d (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G06D) | | 3 |
| Select three credits in Pathway 6a (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G06A) | | 3 |
| *Pathways Concept 7 - Critical Analysis of Identity and Equity in the United States* | | |
| Select three credits in Pathway 7 (https://catalog.vt.edu/course-search/?attrs_pathways=attrs_pathways_G07) that may be double-counted with another core outcome or major requirement | | 3 |
| Subtotal | | 46 |
| **Total Credits** | | **120** |

## Satisfactory Progress

By the end of the semester in which the student has attempted 60 hours (including transfer, advanced placement, advanced standing, and credit by examination), “satisfactory progress” towards a B.S. degree in the College of Natural Resources and Environment will include the following minimum criteria:

- Having a grade point average of at least 2.0
- Passing at least 24 semester credits that apply towards the Pathways General Education
- Passing the required 1000-level courses in Biology, Chemistry, English, and Math

## Graduation Requirements

### In-major GPA Computation

Includes all courses designated SBIO. The acceptable minimum is 2.0.

### Sequencing

Courses should be taken in a sequence that ensures that any prerequisite or corequisite requirements are met. Free elective courses may also have prerequisite requirements. Students should plan ahead and ensure that they have completed prerequisites or are enrolled in corequisite courses.

## Acceptable Substitutions

1. SBIO 3994 **or** SBIO 4994 Undergraduate Research: SBIO 3005 Sustainable Packaging Design and Innovation I **or** SBIO 3006 Sustainable Packaging Design and Innovation II.
2. MATH 1025 Elementary Calculus: MATH 1225 Calculus of a Single Variable
3. MATH 1026 Elementary Calculus: MATH 1226 Calculus of a Single Variable
4. STAT 3604 Statistics for Social Science: STAT 3005 Statistical Methods or STAT 3615 Biological Statistics
5. SBIO 4214 Food and Health Packaging: FST 4304 Food Processing

## Foreign Language Requirement

Two years of one language in high school or complete an 1105-1106 foreign language (e.g. FR, GR, SPAN) grouping or equivalent.