

Packaging for students
with a sustainability-
focused mindset...



Packaging Systems and Design

packaging.sbio.vt.edu

For students interested in sustainability...

Packaging plays a critical role in protecting and securing the products that we buy, use, and consume every day. When used strategically, packaging can help to make things more sustainable by extending the shelf-life of food, communicating important environmental information about a product, and reducing the damage and waste that can result during transport. However, packaging has a bad reputation for its impact upon the environment. We regularly see images of packaging littering roadways, beaches, and even interfering with marine and other wildlife. Fortunately, it doesn't have to be this way. If we are strategic about how we select materials and design packaging, and if we focus on setting up efficient systems for collecting, managing, and reusing / recycling those packages, we can benefit from the amazing advantages that packaging has to offer without impacting the environment.

In order to help make packaging more sustainable, our students learn about environmental implications of material selection and design choice. In addition to gaining expertise in ensuring the optimal performance of a package, packaging professionals must ensure that packaging is sourced ethically, responsibly, and with minimal environmental impacts. They must ensure that packages can be responsibly managed when they are no longer needed. This requires our students to understand recycling systems and capacities, the circular economy framework, the evolving policy landscape related to packaging, and the shift in producer concerns and priorities towards sustainable packaging.

The next generation of packaging professionals must be able to integrate environmental, social, and economic perspectives into packaging design, production, and distribution systems in order to help companies around the world work towards lower environmental footprints and net-zero emissions targets. Thus, the role of a packaging professional is highly multi- and

interdisciplinary. For a packaging system to work effectively and be sustainable, packaging engineers need to have a solid understanding of policy trends, corporate sustainability strategies, packaging management systems and infrastructure, recycling technologies, and life-cycle implications of different materials.

Virginia Tech's packaging curriculum is designed to develop problem solvers who will be able to work in this multidisciplinary environment. Our students learn about effective and high-performing supply chain management and distribution systems so that they are able to understand the global distribution process and effectively communicate with warehousing and logistics professionals. In addition, they gain experience in mapping and modeling the environmental impacts that are associated with packaging design decisions.

During their time at Virginia Tech, our students have the chance to work in packaging laboratories on real-life projects that range from sustainable designs, to life-cycle analysis of reusable vs. single-use packaging systems, and even pilot projects for improving the recycling of difficult packages.

Students who have an interest in sustainable packaging will be well-prepared for careers with some of the world's leading, sustainability-minded companies such as [Tesla](#), [HP](#), [Coca-Cola](#), [Amazon](#), [H&M](#) or any other company that manufactures and ships products. Their jobs focus on optimizing packaging materials in order to reduce the cost of the packages, reduce shipping costs, eliminate damages to products, and increase the sustainability of packaging solutions.



COLLEGE OF NATURAL RESOURCES AND ENVIRONMENT
SUSTAINABLE BIOMATERIALS
VIRGINIA TECH.

The next generation of packaging professionals must be able to integrate environmental, social, and economic perspectives into packaging design.

Transfer Credits:

The Packaging Systems and Design degree offers a lot of flexibility to transfer students to tailor their education and also to allow them to graduate on time. Our **32 free elective credits allow you to transfer classes that you already took** and count it towards your graduation progress. This allows many students to graduate on time even after changing their major.

Example courses:

- SBIO 1114 – A Sustainable Future through Circular Economy
- SBIO 2504 – Circular Economy Analysis

To learn more about the PSD degree:



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Meet with our professional advisor to learn about the degree requirement and transfer credits.



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