

PACKAGING ENGINEERING

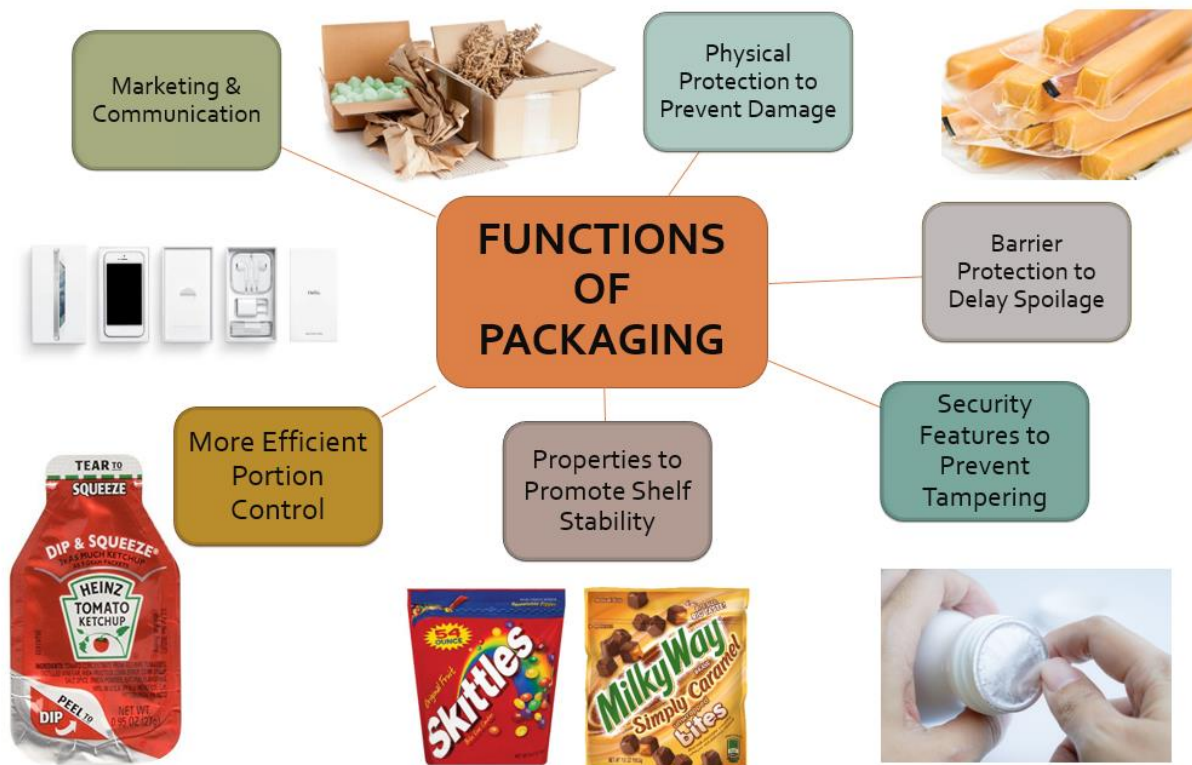
UNDERGRADUATE CERTIFICATE

The undergraduate level certificate in Packaging Engineering is a 12-credit program designed to provide training on the packaging field to Rutgers School of Engineering students. Engineering students who do not wish to pursue a curriculum in packaging may enhance their education and on the job experience by earning the undergraduate packaging engineering certificate. The certificate is offered under the Department of Mechanical and Aerospace Engineering.

Packaging job opportunities are growing as the demand for packaging engineering background continues to rise. As a multi-billion-dollar business, packaging is the world's third largest industry on the basis of gross sales. With more people employed than any other business, the growing need for packaging backgrounds will soon far exceed the actual number of packaging educated. The steady growth in demand for packaging has ensured many of our students have jobs come their completion of the certificate. As long as products are being created, packaging engineering backgrounds will be in demand.

Students must complete 14:440:301 Intro to Packaging and three additional 3-credit packaging courses to earn an undergraduate certificate in Packaging Engineering. The following list are courses eligible for the undergraduate packaging certificate. Green courses will be offered in fall 2022 semester. To request a special permission number or override, please submit your request at packaging.rutgers.edu/forms.

Students enrolled in the Packaging Engineering certificate program are invited to the exclusive Packaging Engineering Career Fair, to be held on September 28th 2022.



Course	Description
14:440:301 Intro to Packaging	This course is an introduction to the principles and technologies of packaging. Packaging may not only serve the purpose to contain a product but may serve as a delivery system or even be considered part of the product itself. Students will understand the principles of effect package performance and the technologies to create packaging components.
14:440:302 CAD for Packaging	Computer-Aided Design (CAD) applications of analysis, synthesis and design. Automated drafting. Development of general-purpose functions, components. Hands-on experience on CAD workstations
14:440:371 Packaging Evaluation Methods	General evaluation of packages through conceptual; understanding of packaging materials in terms of physical & mechanical properties of materials.
14:440:373 Packaging Manufacturing I	The course will cover the packaging materials, process and packaging assets utilized in manufacturing.
14:440:378 Sustainable Packaging	This course is focusing sustainable issues in packaging fields. Overview of sustainability of packaging and address the implementation of sustainable packaging design. Life Cycle Analysis will be examined to measure the environmental impact.
14:440:403 Safety Packaging	An introduction to the principles in safety engineering to design, maintain, and manage a workplace free from hazard for general and packaging engineering.
14:440:406 Packaging Printing and Decoration	Understanding the technical advantages and disadvantages of the major printing technologies and leading decorating techniques; the entire print development process practical knowledge and training obtained to immediately apply.
14:440:468 Packaging Machinery	Introduction to packaging machinery, rigid packaging material handling, flexible packaging material, and general operations
14:440:471 Distribution Packaging	Introduction to distribution packaging: shipping containers, selections of barrier materials; reinforcing, investigation for environment, thermal insulation theory, hazardous materials, ISTA/ ASTM testing
14:440:477 Packaging Manufacturing II	The key areas that will be covered this semester include: Thermoformed packaging, Medical packaging, Tube packaging, Injection & blow molded packaging, glass packaging and metal packaging.
*16:731:501 Fundamentals of Packaging Engineering	Physical and chemical properties of packaging materials; design manufacture, performance and evaluation of packages
*16:731:562 Selected Topics: Science of Quality	While developing new products and packages in the consumer and pharmaceutical industries, it is important to know and understand the management and control of quality. Quality Management has become a science touching upon the tools used to define quality for a given product or system, to solve problems related to conformance to quality expectations, and to know and understand regulatory demands placed on products by national and international agencies.

**Seniors are eligible to take one packaging graduate course (16:731) towards their packaging engineering certificate.*