



The Certificate of Packaging is a 12-course online program that teaches the materials, processes, and influences shaping the advancement of the industry.

From design conception to production and end-of-life, learn how to speak the language of packaging and utilize it as a key differentiator for you and your company.

As the Exclusive Licensee of a Professional Packaging Curriculum developed at Clemson University, the courses offer a relevant and comprehensive education.

You will graduate with the knowledge, tools, and skills to be an influential professional in the packaging field.

**TUITION:**  
**All 12-Courses: \$3,999**  
**Individual Course: \$399**

Payment Plans/Monthly Subscriptions Available



Scan the QR code to learn more about the Certificate of Packaging Science!



## CERTIFICATE OF PACKAGING SCIENCE

12 Courses | 60 Hours (Access for 1 Year) | 6 CEUs

CPS-Certificate of Packaging Science

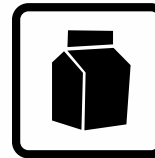
The complete and most convenient option for you to attain a well-rounded education in the global packaging industry.

### FOUNDATIONS

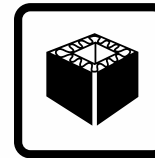


FOUNDATIONS

### MATERIALS



PAPERBOARD



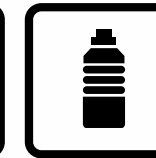
CORRUGATED



GLASS



METAL

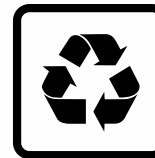


POLYMERS

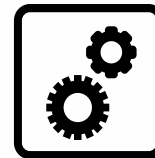
### INFLUENCES/PROCESSES



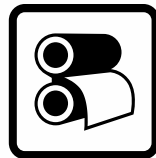
REGULATIONS



SUSTAINABILITY



MACHINERY

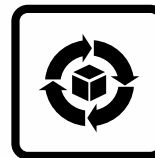


PRINTING



DISTRIBUTION

### STRATEGY



DESIGN WORKFLOW



# FOUNDATIONS OF PACKAGING

80 Micro-Lessons | 8 Hours

CPS-C01 Packaging Foundations

This course serves as an introduction to the packaging industry and provides the fundamental knowledge necessary for you to understand the packaging development process.

**Foundation Beginnings:** Why Packaging Matters, Evolution of Packaging, Industry Overview, Key Stakeholders, Careers in Packaging, Packaging Development Process, Sustainability's Influence, Knowing Your Product First, Packaging Applications

**Wood:** Manufacturing, Packaging Types, Sustainability, Applications

**Paperboard:** Industry Overview, Manufacturing, Packaging Types, Sustainability, Impressive Paperboard Packaging Designs

**Corrugated:** Industry Overview and Trends, Manufacturing, Flute Sizes, Applications, Strength Factors, Testing, Linerboard Grades, Box Styles, Sustainability, Customizing Corrugated, Design Examples

**Glass:** Industry Overview, Manufacturing, Glass Packaging Types, Design Applications, Sustainability of Glass

**Metal:** Industry Overview, Manufacturing, Metal Packaging Types, Sustainability of Metal, Impressive Metal Packaging Designs

**Polymers:** Industry Overview, Fundamental Properties of Plastics, Manufacturing, Reaction Mechanisms, Machinery and Processes, Packaging Types, Innovative Designs, Sustainability of Plastics

**Printing:** Industry Overview, Print Processes, Inks for Package Printing, Designing for Print, Sustainable Print Practices

**Regulations:** Framework for Legal Requirements, Agencies, Code of Federal Regulations, Major Packaging Laws, Discussion

**Distribution:** Land, Air, Sea, Distribution Containers, Dunnage and Cushioning, Testing and Protocols

**Wrap Up:** Review and Assessment



# PAPERBOARD CARTONS

52 Micro-Lessons | 6 Hours

CPS-C02 Paperboard Cartons

This course provides you with a 360° view of the papermaking, converting, and paperboard packaging industry.

**Paperboard Beginnings:** Evolution of Paperboard, Industry Overview, Packaging Types, Glossary, Discussion

**Paper Manufacturing:** Virgin and Recycled Fibers, Pulping, Papermaking, Paper vs. Paperboard, Surface Coatings and Treatments

**Paperboard Grades:** Overview, Uncoated Recycled Boxboard, Bending Chip Board, Clay-Coated Recycled Board, Solid Bleached Sulfate/Board, Uncoated Solid Bleached Sulfate, Solid Unbleached Sulfate, Uncoated Unbleached Kraft, Folding Boxboard, Cheat Sheet

**Properties and Testing:** Testing Standards, Properties: Physical, Performance, Surface, Optical and Electrical, Defects, Sustainability

**Paperboard Styles:** Tubes, Trays, Multipacks, Alternatives, Design Inspiration Tool (featuring 600 dielines with downloads)

**Carton Design:** Board Caliper Report of 51 FMCG Products, Structural Design and Dielines, Finishing, Special Effects, Print Selector Strategy, Discussion

**Procurement and Production:** Ready for Order, Supplier Qualifications, Die Cutting and Making, Assembly, Supplier Database, Carton Cost Calculator

**Wrap Up:** Review and Assessment





# CORRUGATED CONTAINERS

55 Micro-Lessons | 6 Hours

CPS-C03 Corrugated Containers

This course teaches you the science of engineering a corrugated container for any application.

**Corrugated Beginnings:** Overview of Corrugated Board, History, State of the Industry, Grades, Flute Types

**Production of Corrugated Fiberboard:** Integrations, Independents, Papermaking Overview, Corrugated Manufacturing, Container Converting, Printing, Coatings and Surface Treatments

**Corrugated Properties and Testing:** Physical Properties, Porosity Properties, Surface Properties, Sustainability

**Performance Specifications:** RSC Minimization Model, Headspace, Introduction to Compressive Forces, Headspace Experiments, ECT/BCT Modeling Theory and Laboratory Applications

**Container Design:** Standard Container Styles, International Fiberboard Case Code Catalogue, Structural Design Softwares, Dieline Design, Printing and Finishing, Die Cutting, Supplier Directory

**Case Packaging and Unitization:** Packing and Sealing, Unitized Systems, Storage and Handling, Palletization Softwares

**Distribution Rules and Regulations:** Carrier Rules, Government/ Association Regulations, Testing and Protocol

**Wrap Up:** Review and Assessment



# GLASS PACKAGING

35 Micro-Lessons | 3 Hours

CPS-C04 Glass Packaging

This course teaches you the composition of commercial glass, its manufacturing process, and how to design the correct type of glass packaging for various applications.

**Glass Overview:** Interactive History, Industry Overview, Glass Packaging Essentials, Sustainability

**Glass Manufacturing:** Raw Materials, Component Properties, Additives, The Batch House, The Furnace, The Forming Process, Colorants, Treatments, Type I-III Glass, Properties (Thermal, Optical, Chemical, Electrical, Mechanical), Inspections and Defects, Testing Standards, Anatomy of a Glass Bottle

**Glass Container Design:** Glass Container Styles, Finishes and Closures, Decorating and Labeling, Plastics vs. Glass, Glass Finish Drawings, Lightweighting, Design Innovations

**Procurement and Production:** Ready for Order, Glass Bottle Filling Process, Distribution, Glass Resource Locator

**Wrap Up:** Review and Assessment





## METAL PACKAGING

28 Micro-Lessons | 3 Hours

CPS-C05 Metal Packaging

From raw materials and processing to packaging design and development, learn the essentials of metal packaging in this online course.

**Metal Overview:** Timeline, Industry Report, Metal Packaging Basics, Sustainability, Glossary

**Metal Manufacturing:** Raw Materials and Refinement, Manufacturing, Thermal Processing and Treatments, Anatomy of a Can, Understanding BPA

**Metal Containers:** Aerosols, Beverage Cans, Films, Foils, Flexible Packaging, Tins, Bins, Trays, Gift Boxes, Submit a Package

**Metal Container Design:** Metal Closures, Decorating and Labeling, Can Dimensioning, Design Innovations

**Wrap Up:** Review and Assessment



## POLYMERS IN PACKAGING

44 Micro-Lessons | 5 Hours

CPS-C06 Polymers in Packaging

Learn to speak the language of plastics including polymer properties, processing, and application to your packaging projects.

**Polymer Overview:** Evolution of Plastics, Industry Overview & Key Industry Trends

**Polymer Chemistry 101:** Terminology, Interatomic and Intermolecular Forces

**Production:** Packaging Types, Blow Molding, Injection Molding, In-mold Labeling, Thermoforming, Converting, Laminating, Coating, Flexible Packaging Systems, Form-Fill-Seal Systems, Testing Standards

**Plastics in Packaging:** Polymer Cheat Sheet (LLDPE, LDPE, HDPE, PP, PS, PVC, PET, PVDC, EVOH, NYLON, PC, PEN), Regulations, Adhesives, Closure Systems, Distribution Packaging, Polymer Design

**Wrap Up:** Review and Assessment





# PACKAGING MACHINERY

34 Micro-Lessons | 4 Hours

CPS-C07 Packaging Machinery

This course shows you how machinery is used in the manufacturing industry to produce and fill high volumes of quality packages.

**Introduction:** Industry Overview, Evolution of Technology, Glossary

**Machinery 101:** Levels of Packaging, Automation, Layout and Orientation, Measuring Speed

**The Packaging Production Line:** Line Loading and Unloading, Container Cleaning, Liquid Product Filling, Solid Product Filling, Flexible Packaging, Form-Fill-Sealing, Capping and Closing, Labeling, Coding and Inline Printing, Inspecting, Cartoning and Case Packaging, Conveyors, Thermoforming

**Increasing Production Efficiency:** Changeovers, Creating a More Flexible Packaging Line, Package Design and Machinability

**Wrap Up:** Review and Assessment



# PRINTING PACKAGING

45 Micro-Lessons | 4 Hours

CPS-C08 Package Printing

This course teaches you the graphic design workflow and major print processes for bringing packaging to life.

**Printing Overview:** History of Printing, Industry Analysis, Package Printing Glossary

**Printing 101:** Color Theory, Artwork and Design, Ordering Process, Print Order Checklist, Inks, Prepress

**Printing Processes:** Letterpress, Flexography, Lithography, Gravure/Intaglio, Screen Printing, Digital Printing, Post Press, Print Selection Strategy, The Future of Print

**Printing Packaging:** General Labeling, Cartons & Containers, Flexible Packaging Systems, Metal and Glass, Plastic Packaging, Sustainability, Design Inspiration

**Wrap Up:** Review and Assessment





# DISTRIBUTION PACKAGING

40 Micro-Lessons | 4 Hours

CPS-C09 Distribution Packaging

This course teaches you the ISTA and ASTM test protocols used to develop packaging that combats distribution hazards.

**Distribution Overview:** Introduction, Defining Transport Packaging, Developing Distribution Systems, Discussion, Distribution Glossary

**Transportation Modes:** Introduction, Carrier Considerations, Carrier Rules and Regulations, Road Transportation, Rail Transportation, Air Transportation, Sea Transportation

**Hazards and Testing:** Introduction, Distribution Hazards, Atmospheric Pre-Conditioning, Drop Testing, Tilt Testing, Horizontal Shock Testing, Vibration Testing, Shock Testing, Compression Factors, Compression Testing

**Performance Design:** Introduction, Testing Overview, Product Fragility, Cushioning Systems, Dunnage Options, Corrosion Mitigation

**Packaging Systems:** Introduction, Wood Containers, Pallets, Pallet Type Comparison Guide, Corrugated Containers, Returnables, Other Systems, Unitization, Information Design for Distribution, UN Markings

**Wrap Up:** Review and Assessment



# PACKAGING REGULATIONS

32 Micro-Lessons | 3 Hours

CPS-C10 Packaging Laws and Regulations

This course provides you with a framework for approaching packaging compliance in addition to resources of main regulatory agencies and laws shaping the current landscape.

**Packaging Regulations Landscape:** Classifying Laws, Complying with Laws, Understanding How Regulations Affect Packaging Decisions

**Framework for Legal Requirements:** Product-Dependent, Material-Dependent, Structural Requirements, Labeling Law, Environmental Law, Intellectual Property Law, Science and Fact Based, Regulatory Law, Federalism, Political

**Major Regulatory Agencies:** Food and Drug Administration (FDA), Environmental Protection Agency (EPA), U.S. Department of Agriculture (USDA), Code of Federal Regulations (CFR), American Society for Testing and Materials International (ASTM), International Organization for Standardization (ISO)

**U.S. Framework:** Compliance and Clearance, Decision Tree for Packaging Compliance, Responsibility of the Manufacturer, GRAS, Prior-Sanctioned Substances, Threshold of Regulation Exemptions, Food Contact Notification, Regulatory Implementations

**Global Framework:** Horizontal and Vertical Regulations, Contact Types, Conformity Certificates, Declaration of Compliance, Food Contact Symbols, Import/Export

**Industry-Specific Checklists and Cheat Sheets:** Food, Beverage, Health and Beauty, Household and Industrial

**Wrap up:** Review and Assessment



# SUSTAINABLE PACKAGING

40 Micro-Lessons | 4 Hours

CPS-C11 Sustainable Packaging

This course provides resources and tools that you can use to assess the sustainability of any packaging design across its complete lifecycle.

**Introduction:** Defining Sustainability, Environmental Impacts of Packaging in the Waste Stream, Energy Usage, The Circular Economy

**Sustainable Design Models:** Cradle to Grave, Cradle to Cradle, Life Cycle Assessment (ISO 14072:2014), Effective Recovering

**Sustainable Design Tools:** Overview of Resources, Comparative Analysis Software Tools, Package Smart, Production Technologies and Best Practices, Packaging Material Selection

**Environmental Labeling:** ISO and FTC Standards, ISO 14020, Recyclability Claims, Beware of Greenwashing

**Sustainable Packaging Procedures:** Source Reduction, Recycled Content, Designing for Transport, Fair Labor and Trade Practices, Green Engineering, Resource Recovery

**Wrap Up:** Future of Sustainability, Review, Assessment



# DESIGN WORKFLOW

44 Micro-Lessons | 5 Hours

CPS-C12 Packaging Design Workflow

This course enables you to achieve the skills needed to tackle any packaging design project.

**Introduction:** Defining Packaging Design, Professional Roles and Functions, Packaging Design Workflow, Glossary of Design Terms

**Branding Basics:** Defining Branding, Color Theory, Typography, Branding and Logo Workshop, Brand Guidelines and Stylesheets

**Starting a Project:** Get Off on the Right Foot, Team Building, RFPs and Proposals, Project Management and Timelines, Supply and Distribution Maps, Research and Insights, Category and Planogram Audit, How to Create a Package Design Brief, Create Your Own Brief

**Package Development:** Designing Your Package, Design Principles and Considerations, Brainstorming, Ideation Selection, Materials and Structure Workshop, Primary Display Panel, Visual Design Workshop, Legal and Regulatory Requirements, Final Considerations and Digital Proof

**Design Refinement:** Let's Refine That Design, Prototyping, Sustainability Considerations, Qualitative Research, Quantitative Research, Survey Basics, Eye Tracking 101

**Production Prep:** Ready for Production, Final Assets, Package Specification Process, Production, Preflight Checklist

**Wrap Up:** Review and Assessment

