Christian Brothers University

INTRODUCTION TO PACKAGING ENGINEERING
June 18-22, 2007
Sponsored by the International Corrugated Packaging Foundation
http://www.careersincorrugated.org/

CURRICULUM

DAY	SESSION (Duration)	TOPICS	ADDITIONAL INFO
1	Basic Mechanics (45 minutes)	Newton's laws of motion; equilibrium; stress-strain curves, elasticity, ductility, strength, and toughness; static versus dynamic loadings	A-1-1.pdf
	Basic Structures (50 minutes)	Forms and shapes; trusses, stability	A-1-2.pdf
	Hands-on Balsa Wood Crates (30 minutes)	Explanations of rules; pictures of crates from past competitions	A-1-3.pdf
	Field Trip to Pratt Industries (180 minutes)	Corrugated board making; box design and manufacturing	A-1-4.pdf
2	Introduction to Packaging (100 minutes)	Packaging engineering; the system of packaging science; career opportunities; packaging industry; package test methods; packaging schools	A-2-1.pdf
	Hands-on Egg Cushion (50 minutes)	Explanations of rules; containers; cushioning materials	A-2-2.pdf
	Field Trip to Schering-Plough (180 minutes)	Warehouse management; distribution system	A-2-3.pdf
3	Distribution Packaging (150 minutes)	Physical distribution environment and distribution hazards; mathematical model and theory of protective packaging system; product fragility and vibration sensitivity; cushioning materials and properties; compression issues; protective packaging development process; packaging for perishables and temperature sensitive products; packaging testing methods, standards, and systems	A-3-1.pdf
	Field Trip to Bryce Corporation (180 minutes)	Flexible packaging operations	A-3-2.pdf
4	Hands-on Egg Cushion (50 minutes)	Group work on egg cushion project	A-4-1.pdf
	Process Control (50 minutes)	Case Studies: 1. Upgrade of the flaking packaging line; 2. autonomous robotics; 3. radio frequency identification in distribution packaging	A-4-2.pdf

	Hands-on Balsa Wood Crate (50 minutes)	Group work on balsa wood crate project	A-4-3.pdf
	Field Trip to Medtronic (180 minutes)	Medical device packaging operation	A-4-4.pdf
5	Recycling (50 minutes)	Ecosystem; types and causes of wastes; examples of various methods of waste reduction; roles and responsibilities of scientists and engineers	A-5-1.pdf
	Competitions (50 minutes)	Egg drop and balsa crate crush	A-5-2.pdf A-5-2.wmv
	Keynote Address (30 minutes)	"Why Packaging?"	A-5-3.pdf
	Information Searching (60 minutes)	Information development and flow; copyright and plagiarism; organizing information; academic disciplines; search techniques for finding books and articles; Internet; research project	A-5-4.pdf
	College Admissions (60 minutes)	College application process; admission requirements; financial aid; typical deadlines; campus visits	A-5-5.pdf