

## Possible Topics in Sustainable Design

- ✓ The “Greening” of the Marketplace
- ✓ Using Sustainable Design as a Strategy for Commercial Success
- ✓ Overview of Environmental Product Issues
- ✓ Basic Elements and Terminology of Sustainable Design
- ✓ Life Cycle Inventory/Assessment (LCIA) Tools
- ✓ Minimizing Direct Environmental Impact Using the Principles of Sustainable Design
  - Using Sustainable Sources of Raw Material
  - Sourcing-Reducing Products and Packaging
  - Conserving Natural Resources, Habitats, and Endangered Species
  - Using Recycled Content
  - Making Products and Processes Energy Efficient
  - Maximizing Consumer and Environmental Safety
  - Making Products More Durable
  - Making Products and Packaging Reusable and Refillable
  - Designing Products for Remanufacturing, Recycling, and Repair
  - Making Products Safe for Disposal
  - Making Products and Packaging Compostable
  - Implementing Green Process and Facility Concepts

Each of the above bulleted topics could have a short application/exploration associated with it, such as a LCIA exercise.

- ✓ Possible Reinforcing Case Studies
  - Tom’s of Maine (personal care products)
  - Patagonia (outerwear)
- ✓ Possible MCCDE “Guitar” Project Tie-ins using LCIA:
  - Materials selection for body, neck, etc.
  - Selection/minimizing of adhesives/finishes/solders/cleaners
  - Packaging concepts
  - Process selection and design
  - Waste generation and handling

At BC3, there is no single “design” course as we do not currently offer a traditional MET degree. For BC3, these modules would be divided among various courses in our Manufacturing Technology and Computer Aided Drafting programs, as shown below:

MECH-103	Materials and Processes of Manufacturing
MECH-107	Introduction to Manufacturing Systems
DRFT-115	Engineering Graphics
DRFT-110	Advanced Drafting
MECH-129	Plastics Manufacturing
MECH-281	Manufacturing Capstone Project
MECH-205	Machine Design - CADD

<u>Lecture</u> <u>Hours</u>	<u>Lab</u> <u>Hours</u>	<u>Topic</u>
1	0	The “Greening” of the Marketplace
1	0	Using Sustainable Design as a Strategy for Commercial Success
1	0	Overview of Environmental Product Issues
1	0	Basic Elements and Terminology of Sustainable Design
2	3	Life Cycle Inventory/Assessment (LCIA) Tools
1	1	Using Sustainable Sources of Raw Material
1	1	Sourcing-Reducing Products and Packaging
1	1	Conserving Natural Resources, Habitats, and Endangered Species
2	1	Using Recycled Content
1	1	Making Products Energy Efficient
1	1	Maximizing Consumer and Environmental Safety
1	1	Making Products More Durable
1	1	Making Products and Packaging Reusable and Refillable
1	1	Designing Products for Remanufacturing, Recycling, and Repair
1	1	Making Products Safe for Disposal
1	1	Making Products and Packaging Compostable
2	1	Green Process and Facility Concepts
1	3	Reinforcing Case Study(ies)