SYSTEM DESIGN FOR SUSTAINABILITY

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INTENDED AUDIENCE : Bdes (final year) & Mdes students

PRE-REQUISITES : Prefered courses but not mandatory - System Design

INDUSTRIES APPLICABLE ABLE TO : Product/ Industrial Design and Manufacturing Companies System Design and R&D Industry , Strategic Design Groups of Industry Industries interested in Sustainability

COURSE OUTLINE :

Design for Sustainability is a design thinking process for widening the boundaries of the objective of design so as to contribute positively to sustainable development. It encompasses four approaches: 1. Selection of resources with low environmental impact; 2. Design of products with low environmental impact; 3. Product-Service System Design for eco-efficiency; 4. Design for social equity and cohesion. This course will discuss these Design approaches, methods and tools alongwith case examples

ABOUT INSTRUCTOR :

Prof. Sharmistha Banerjee is working as Assistant Professor at Department of Design at IIT Guwahati. She did her bachelor in Industrial Design from IIT Guwahati and a master in Integrated Product Design from Technical University of Delft, Netherlands. Her PhD is from IIT Guwahati in the domain of Design for Sustainability applied to agricultural machinery design. She is focused in the area of sustainable product & system development in a collaborative work environment. She has established the Sustainability and Social Innovation Lab along with her colleagues at Department of Design which is also part of the International Learning Network on Sustainability, a consortium of more that 200 global universities working in this domain.

COURSE PLAN :

Week 1: Basics - What is sustainability, sustainable development and why do we need it?

Week 2: Basics - Evolution of sustainability within Design

Week 3: Product Life Cycle Design – Methods & Strategies

Week 4: Product Life Cycle Design – Software Tools

Week 5: Sustainable Product-Service System Design – Definition, Types & Examples

Week 6: Sustainable Product-Service System – Transition Path and Challenges

Week 7: Designing for Sustainable Product-Service System – Methods and Tools

Week 8: Designing for Sustainable Product-Service System – Methods and Tools

Week 9: Designing for Sustainable Product-Service System – Methods and Tools

Week 10: Other Design for Sustainability Tools and approaches

Week 11: Design for Sustainability – Engineering Design Criteria and Guidelines

Week 12: Summary - Connecting the threads