NSE-812 Environmental Nanotechnology

Prerequisite: Nil

Category: Elective Course

Existing Course Contents	Proposed Course Contents
Course contents: • Review of the molecular basis that determines the properties and applications of nanostructured materials • Overview of the most common tools used to characterize nanostructures • Description of selected functional nanostructured materials, their structure and properties • Presentation of a global perspective on how nanotechnology can address current environmental issues Overview of selected areas in which nanotechnology is already used to target specific environmental problems • Identification of target areas in which nanostructured materials can offer an adequate solution to existing environmental challenges • Analysis of the impact of nanotechnology-based solutions in a global and societal context, as related to environmental issues • Recognition of the consequences of indiscriminate release of nano-materials in the environment	**Course contents:** • Review of the molecular basis that determines the properties and applications of nanostructured materials • Description of selected functional nanostructured materials, their structure and properties • Presentation of a global perspective on how nanotechnology can address current environmental issues Overview of selected areas in which nanotechnology is already used to target specific environmental problems • Identification of target areas in which nanostructured materials can offer an adequate solution to existing environmental challenges • Analysis of the impact of nanotechnology-based solutions in a global and societal context, as related to environmental issues • Recognition of the consequences of indiscriminate release of nano-materials in the environment

Proposed Weekly Plan for the Concerned Faculty

Week /Lecture	Topic
1	Review of the molecular basis that determines the properties and applications of nanostructured materials
2-4	Description of selected functional nanostructured materials, their structure

	and properties
5-8	Presentation of a global perspective on how nanotechnology can address current environmental issues Overview of selected areas in which nanotechnology is already used to target specific environmental problems
9-11	Identification of target areas in which nanostructured materials can offer an adequate solution to existing environmental challenges
12-15	Analysis of the impact of nanotechnology-based solutions in a global and societal context, as related to environmental issues
16,17	Recognition of the consequences of indiscriminate release of nano-materials in the environment