

<b>Devi Ahilya University, Indore, India Institute of Engineering &amp; Technology</b>			<b>II Year B.E. ( Computer Engineering) (Full Time)</b>				
<b>Subject Code &amp; Name</b>	<b>Instructions Hours per Week</b>			<b>Credits</b>			
<b>SCR3S3 Environmental Studies</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Total</b>
	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>

**Learning Objectives:** The Solving the e-Waste Problem (StEP) Initiative, an organization composed of various UN agencies, NGOs and companies working in the Information and Communication Technology Sector & to create understanding of Basel Ban form an effective and sustainable means of addressing the health and environmental problems caused by the export of e-waste from developed countries to developing nations

**Pre requisites:** Basic Knowledge about Electronic & Electrical components.

### **COURSE CONTENTS**

#### **UNIT-I**

**Introduction** - What is & how is Electronic Waste generated, Toxins in E-waste , issues, Business Model, Basel Convention, Basel Ban.

#### **UNIT-II**

**Classification of E-Waste** - Composition of E-Waste, Components of E-Waste, Possible hazardous substances present in e-waste, E-waste scenario, Basis for Defining e-waste, Proposed definition of E-Waste, RoHS in the Electronic & electrical Equipments ,EPR.

#### **UNIT-III**

**Legal Framework** - The Hazardous Wastes (Management and Handling) Rules, The Municipal Solid Wastes (Management and Handling) Rules, Basel Convention, European Union policy and regulation on e-waste, US Policy for E-Waste

#### **UNIT-IV**

**The Global Impact of E-waste** - E-waste management in India, Global E-Waste Management, Analysis of systems and best practices

#### **UNIT-V**

**Recycling From E-waste to Resources** - Perspectives of WEEE/E-waste Management, Fundamentals Of E-Waste Recycling, Markets For Recycling Technology, Application Of A “technology Transfer Framework” For Selected Recycling Technologies, Innovation Hubs And Knowledge Centres Of Excellence In Emerging Economies

#### **Learning Outcomes:**

- Students will have knowledge about controlling E-waste & business models available.
- Students will have insight about recycling the E-waste.
- Students will have information about the different authorized E-waste collectors and government policies.

**Books Recommended:**

- Products From Waste (Industrial & Agro Waste) 2nd Edition  
Author: NIIR Board ISBN: 818662337X
- Modern Technology of Waste Management: Pollution Control, Recycling, Treatment & Utilization  
Author: NIIR board ISBN: 8178330849
- The Complete Book on Managing Food Processing Industry Waste  
Author: H. Panda ISBN: 9788178331454
- The Complete Technology Book on E-Waste Recycling (Printed Circuit Board, LCD, Cell Phone, Battery, Computers)  
Author: NPCS Board of Consultants & Engineers ISBN: 9788178331577