

**SARDAR PATEL UNIVERSITY**  
**Programme: B.Sc (Environmental Science)**  
**Semester: V**  
**Syllabus with effect from: June 2013**

<b>Paper Code: US05CENV02</b>	<b>Total Credits: 3</b>
<b>Title Of Paper: Pesticide, Herbicide, Fungicide Toxicology</b>	

Unit	Description in detail	Weightage (%)
<b>I</b>	<b>Introduction to Toxicology</b> Definition, Biotransformation: Detoxification and Bio activation, Species differences and determining factors, Absorption, Distribution and Elimination of Xenobiotics, Dose Response relationship. <b>Bioassay</b> - Definition, Purpose of Bioassay, Selection of test organisms, Types of toxicology, Types of Bioassay, Pollutant Bioassay using Fish.	<b>25%</b>
<b>II</b>	<b>Pesticide Toxicology</b> Classification, Toxicology and Impacts of pesticides , Mode of action and metabolism of Organochlorine insecticide, Dieldrin, Organophosphate insecticide - Parathion and Malathion, Carbamate insecticide - Carbaryl and Aldicarb. Case Study - DDT in Environment, Bio magnification, Pesticide resistance.	<b>25%</b>
<b>III</b>	<b>Herbicide Toxicology</b> Classification, selectivity, uptake, chemistry, Mode of action of the following; Dichlorobenzyl, Dalapon, Aromatic Carbamates, Diuron and monouron, Triazines- Atrazine, Enothal, Paragat, Phenoxy herbicide- 2,4-D and 2,4,5-T.	<b>25%</b>
<b>IV</b>	<b>Fungicide Toxicology</b> Types, Selectivity, Mode of action. Chemistry of Copper and Mercury Derivatives, Dithio Carbamates- Thiram, Ziram, Captan, Dichlone (Quinones), Benomyls, Carboxiamides and Organophosphates	<b>25%</b>

**Basic Text & Reference Books:**

- Wilson & Gisvold's - Textbook of Organic Medicinal & Pharmaceutical Chemistry, Edited by Jamie N. Delagado, William A. Remers(1998) - Lippincalt - Raven - Pub. Philadelphia.
- Principle of Medicinal Chemistry - William O. Foye, Thomas R. Remelee & David A. Williams (1995) - B.J. Heaverly Pvt. Ltd. New Delhi
- Toxicology - principle and Applications - Raymond T.M. Niesink, Thon de vries, manfred A. Hollinger (1996) - CRC press and open university of Netherland (1996)
- Toxic chemicals, Health & Environment - lane, L.B. Upton
- Herbicides - Physiology, Biochemistry and ecology, Andus
- Pesticides - Dhaliwal & balwinder Singh
- Fungicides in plant Disease control - Neve
- Biochemical effects of Environmental Pollutants - Lee
- Pesticide pollution - Kudesia and Charaya
- Insecticide Biochemistry and Physiology - C.F.Wilkinson (1976), Plenum press New York
- Environmental Chemistry - A.K.De(1995), Wiely Eastern.

