

**SARDAR PATEL UNIVERSITY**  
**Programme: MSC (Forensic Science)**  
**Semester: III**  
**Syllabus with effect from: June 2011**

<b>Paper Code:</b> PS03CFSC02	<b>Total Credits: 4</b>
<b>Title Of Paper:</b> Forensic Toxicology, Forensic Pharmacology and Forensic Serology	

Unit	Description in detail	Weightage (%)
<b>1</b>	<p><b>Forensic toxicology:</b> introduction and concepts of Forensic toxicological examination and its significance.</p> <p><b>Poisons-</b> classification of poisoning, collection and preservation of toxicological exhibits in fatal and survival cases, signs and symptoms of poisoning, mode of action and its effect on vital functions, medico-legal and post mortem examination report/finding studies, specific analysis plan/approach to toxicological examination of poisoning samples.</p> <p><b>Different types of poisons</b>            Examination of metallic poisons, volatile poisons, and snake venom, insect's bites, poisons involving animal poisoning cases and their examination.</p>	<b>25 %</b>
<b>2</b>	<p><b>Extraction techniques</b>            Extraction, isolation and clean-up procedures- using conventional as well as modern techniques such as solid phase micro extraction techniques, separation, identification and estimation of poisons and drugs using chromatographic and Electrophoretic techniques and other instrumental techniques, significance of analytical studies with respect to forensic examination.</p> <p>Various Plant Poisons.</p>	<b>25 %</b>
<b>3</b>	<p><b>FORENSIC PHARMACOLOGY:</b> Forensic pharmacological studies, ingestion of drugs, absorption, distribution, metabolism, pathways of drug metabolism, drug metabolism and drug toxicity, excretion of drugs and poisons, detection of poisons on the basis of their metabolic studies, interpretation of analytical data and forming of opinion.</p> <p>Interpretation of toxicological findings and preparation of reports, limitations of methods and trouble shooting in toxicological examination, disposal of analyzed samples, some interesting cases of common and specific poisons and their importance in view of the specific scientific approach in examinations.</p>	<b>25 %</b>
<b>4</b>	<p><b>FORENSIC SEROLOGY:</b> Serogenetic markers: blood groups- history, biochemistry and genetics of ABO, Rh, Mn and other systems, methods of ABO blood grouping from the blood stains and other body fluids/stains viz. menstrual blood, semen, saliva, sweat, tear, pus, vomit, hair, bone, nail, etc. blood group specific ABH substances, determination of secretor/non secretor status, Lewis antigen, Bombay.</p> <p>Blood group, polymorphic enzyme typing- PGM, GLO-I, ESD, EAP, AK, ADA etc and their forensic significance, HLA typing, Role of serogenetic markers in individualization, paternity disputes etc.</p>	<b>25 %</b>



### **Basic Text & Reference Books:**

- Forensic Toxicology manual (Directorate of Forensic Science).
- Principles of Forensic Medicine including Toxicology – Nandi Apurba.
- Parikh's Textbook of Medical Jurisprudence Forensic Medicine – C.K.Parikh.
- Forensic Science in Criminal investigation – B.R.Sharma.
- Analysis of plant poisons – Goutam M.P.
- Forensic Medicine & Toxicology - R.K.Sharma.
- Forensic Medicine – Guharaj P.V.
- Textbook of Pharmacology – N. Mrugesh.

