

# **Solapur University, Solapur**

## **M.Phil/Ph.D Course Work Syllabus**

### **Pharmacy**

**(w.e.f.2014-15)**

1. Research Methodology & Information Communication Technology
2. Pharmaceutical Sciences-I
3. Pharmaceutical Sciences-II

## 2. Pharmaceutical Sciences-I

**Drug Discovery and Development:** Pre-discovery, Drug Discovery, Early Safety Tests, Preclinical Testing, General principles of screening, correlations between various animal models and human situations, animal ethics.

**Clinical Trials:** Types, design, protocol, Phases viz., Phase 0, Phase I, Phase II, Phase III, Phase IV, Phase V, safety, ethical conduct.

**Analytical methods:** Analytical Methods for the Drugs in pharmaceutical dosage forms and biological fluids, methods and procedures for assuring that quality is designed into pharmaceutical products. Basic principles and pharmaceutical applications of UV-Visible Spectroscopy, IR Spectroscopy, HPLC Chromatography, ELISA.

**Drug Regulatory bodies:** Drug Regulatory Agencies of developed countries, Investigational New Drug (IND) Application, New Drug Application (NDA) & Abbreviated New Drug Application (ANDA) Approval.

**GMP:** Guidelines- Building and Facilities, Equipment, Personnel, Raw Materials, Production, Laboratory Controls, Records, Labeling and ICH guidelines.

### 3. Pharmaceutical Sciences-II

**Biopharmaceutics:** Introduction, biopharmaceutic principles. Basic Pharmacokinetics- Introduction, compartmental models and Non compartment model.

**Bioavailability & Bioequivalence:** Definitions, bioavailability and bioequivalence, relative and absolute bioavailability, bioequivalence studies for solid oral drug products.

**Novel Drug Delivery Systems:** Transdermal Delivery Systems; Carrier Based Delivery Systems-Liposomes, Monoclonal Antibodies, Nanoparticles, Microspheres; Variable Release Delivery Systems-Osmotic Pump, Microencapsulation, Ion Exchange Resins, Tablets in Capsules; Implantable Delivery System; Nasal Delivery Systems

**Drug Interaction:** Introduction, pharmacokinetic interactions, pharmacodynamic interactions, clinical significance and management of drug interactions. **Adverse Drug Reaction Reporting:** Introduction, definition, types, recognition, surveillance program reporting to FDA.

**Scope of Pharmacy & Role of Pharmacist:** National drug policy of India, guidelines for rational prescribing, rational use of antibiotics common OTC drugs, Role of Pharmacist, Drug Information Resources and essential drugs.