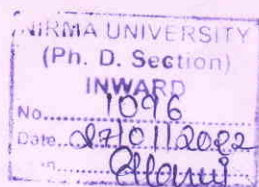


**NIRMA UNIVERSITY**  
**INSTITUTE OF PHARMACY**

**Syllabus for PhD. Entrance Examination 2022-23**

**(Pharmacognosy):**

- Pharmacognosy, phytochemistry, isolation, characterization and estimation of commercially important Alkaloids, Glycosides, Flavonoids, Phenolics, Terpenoids and Steroids from natural sources.
- General Techniques of Biosynthetic Studies and Basic Metabolic Pathways/Biogenesis, Role of plant-based drugs on National economy: World-wide trade in medicinal plants and derived products. Utilization and production of important phyto-constituents, medicinal plant biotechnology and Plant Tissue Culture and its applications in pharmacognosy; Novel medicinal agents from marine sources; Natural allergens, natural sweeteners, enzymes
- Analytical pharmacognosy and Herbal Drug Technology: Standardization and quality control of herbal drugs and WHO guidelines, applications of different analytical techniques like UV, IR, Mass, NMR and chromatographic techniques for quality of herbal drugs, Safety and efficacy of herbal drugs, Infrastructure of herbal drug industry involved in production of standardized extracts and various dosage forms, Monographs of herbal drugs, Current challenges in upgrading and modernization of herbal formulations, Schedule T and Regulatory guidelines for herbal drugs, Introduction to AYUSH system and different dosage forms and Shelf life and Stability studies of ISM formulations, Herbal formulations and herbal cosmetics, Commonly used herbal cosmetics, raw materials, preservatives, surfactants, humectants, oils, colors, and some functional herbs, preformulation studies, compatibility studies, possible interactions between chemicals and herbs, Cosmeceuticals of herbal and natural origin, Regulations and challenges in herbal cosmetics.
- Nutraceuticals: Formulation and standardization of nutraceuticals, Regulatory aspects, FSSAI guidelines and health benefits and uses of important contemporary nutraceuticals constituents, phytopharmaceuticals: isolation and characteristic features (Chemical nature, uses in pharmacy, medicinal and health benefits) of important carotenoids, flavonoids phenolics, saponins etc.
- History of herbs as source of drugs and drug discovery, the lead structure selection process, structure development, product discovery process and drug registration, Selection and optimization of lead compounds, Pharmacovigilance of drugs of natural origin, Safety and toxicological aspects of drugs of natural origin.



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