

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

**SYLLABUS FOR PH.D ENTRANCE EXAMINATION-2021-22**

**(Pharmaceutics, Pharmacology, Pharmaceutical Chemistry, Pharmaceutical Analysis and Pharmacognosy)**

**SUBJECT: RESEARCH METHODOLOGY**

**1. Fundamentals of Research**

- Objective & Types of Research
- Selecting a research problem
- Methods, Design and Tools used in research
- Literature Survey, Primary & Secondary Sources of Information
- Documentation types and techniques

**2. The research Report/Paper writing/thesis writing and Scientific Writing**

- E-Resources
- Presentation of Experimental Data
- Ethics in Research & Publication
- Plagiarism and software to detect plagiarism
- Writing scientific manuscript

**3. Research Grants Writing**

- Overview of various National and International Agencies
- Types of different Government and Private granting bodies
- Research Proposal Writing

**4. Intellectual property rights (IPR) & Patents**

- IPR: Introduction to patents, copy rights & trademarks
- Patent : Prior art search, patent filing in India and abroad, patent infringement

**5. Statistics in research**

- Fundamentals and applications of mean, median, mode, standard deviation, SEM, Regression and Correlation analysis, hypothesis testing (Z-test, t-test, chi square etc.), ANOVA etc. in pharmaceutical research with its interpretations.