

**Structure details of the syllabus to be covered in 450 hours
by the Ph.D. Research Scholars for 2011-12**

Sl. No.	Particulars of the topic	No. of hours
01.	<p>Introduction to Ph. D Programme: Introduction to the course, course objectives, Open House Discussion, timely submission of Half yearly Reports & Synopsis submission, articles submission. National Knowledge Commission. National Assessment and Accreditation Council (NAAC) University Grant Commission (UGC)</p>	10
02.	<p>Historical Perspectives: Historical narration about conduct of research on human subject, Biblical times, research on vulnerable population, tackling of ethical issues in the past century. Ethical code, Nuremberg code, Helsinki declaration, Belmont principles in conduct of research in human subject.</p> <p>Ethical Issues in Research : Background, general principles on ethical considerations involving human participants, general ethical issues, Ethical Review Committee – need, relevance and working rules & regulations as applicable in India. Ethical Review Procedures, IRB. Principles for clinical evaluation of drugs/ devices/diagnostics/vaccines/ herbal remedies. Informed Consent Process – Preparing a informed consent for a research project.</p>	25
03.	<p>Good clinical practices: Legal – Regulatory Framework, U.S. Regulations, Principles of GCP, Fundamentals of GCP. GCP & ICH Guidelines</p>	5
04.	<p>Good Laboratory Practices SOP in lab practice, Bio safety, disposal, ethical practices, standardization of techniques and instruments.</p>	5
05.	<p>An Approach to Research in Health Science Research protocol development Research Methodology – Defining research questions/Hypothesis, Study designs - cross sectional study ,case control study and</p>	50

	<p>randomized clinical trials Clinical Trials – Introduction, composition, procedures & records, Informed consent, responsibility & rules applicable to investigators and sponsors, ethical issues.</p> <p>Grant Writing – Introduction, specific aims, review of literature, measures, methodology, study plan and statistical analysis. Protection of human participants, proposed budget and time line for the proposal.</p> <p>Pre-Clinical Research / Translational Research</p>	
06.	<p>Manuscript Writing Writing a scientific manuscript, structured writing and language editing, writing respondents & presentation, bibliography, impact factor, plagiarism, referencing & citations, GCP and safety. Hands on workshop on writing abstracts and manuscripts.</p>	25
07.	<p>Critical Appraisal Of Article Published In Scientific Journal What is critical appraisal and why critical appraisal, present scenario of scientific publications, methodology of critical appraisal, format for critical appraisal</p>	10
08.	<p>Bio-Statistics Introduction to Bio-statistics, translating research problem into hypothesis testing, Type I & Type II errors in statistics, checking errors in data and correcting them. Types of variables and types of data measurements scales, Data Collection methods, presentation & organization of data – Tabular / Graphical Form. Sampling Designs, Descriptive Statistics - Measures of central tendency & measures of dispersion, correlation Analysis, Regression Analysis, Probability Theory - Binominal distribution, Poisson distribution, normal distribution, concept of testing of hypothesis. Test of Significance-Parametric tests-Z test, T test, ANOVA and Non Parametric tests- Chi-Square test, Wilcoxon Rank test, Kruskal Wallis test. Sample size calculation for different study designs, devising conclusion from data analysis. Use of computers and data cleaning and management learning.</p>	100
09.	<p>Evidence Based Medicine Introduction to Evidence Based Medicine, Lecture followed by Group activity on EBM, critical appraisal of literature for Evidence Based Medicine</p>	15
10.	<p>Thesis Writing Introduction to thesis writing, format for thesis writing, seminar presentations, preparation for Viva-Voce & communication skills.</p>	10

11.	Health Insurance Types of health insurance, scope, limitation and Utility. Introduction, history and evaluation of health insurance. Classification of health insurance schemes. Public Sector health insurance schemes for profit, like LIC, GIC and its subsidiaries. Public Sector health insurance schemes for non profit like, CGHS, ESI and for disadvantaged groups. Private Sector (Non profit) - Community health insurance schemes. Future challenges of health insurance.	10
12.	Bio diversity Medicinal plants, application of biotechnology in herbal drug development. - DNA finger printing - Molecular biological techniques - Genetic coding	10
13	Alternative systems of medicine Various system of medicines Sidha Unani, Homeopathy, Naturopathy, Polanty theory, Reiki, Magneto therapy, Chinese Acupuncture, Ayurveda.	25
14	Health care delivery systems in India National Population Policy. National Health Policy. National Rural Health Mission (NRHM program). RCH program. Current Health Problems. Environment & health. Chronic non communicable diseases – Challenges for India. Biomedical waste. Emerging and re-emerging infectious diseases in the world and in India. Population explosion causes and its impact. Health as a Human Right, Patient Counseling	40
15	Miscellaneous WHO guidelines for essential medicines. Drug scenario in India. Rational use of medicine in India. Pharmacovigilance – challenges in India. Standard treatment guidelines & essential medicine list. Nobel Laureates. Indian scientists of repute.	10
16	Library Work	100
	Total	450