

**Ph.D. Course Work (Department of Dravyaguna)**

<b>Sr No</b>	<b>Course Title</b>	<b>Syllabus</b>	<b>Hrs</b>
01	Review of literature & Presentation of Seminar on a Research theme topic	Review of related research theme from Ancient period, Medieval and modern period. The Seminar will be presented after comprehensive review of the related research theme before the D.R.C/R.P.C.	12
02	Preparation and presentation of the research plan proposal.	Aim of Research Plan Proposal, objectives of the research, introduction, methodology, inclusion and exclusion criteria, observation probable result in accordance with the Research Plan Proposal. The Seminar will be presented before the D.R.C/R.P.C.	12
03	Study of Dravya	Study of Dravya and its Panchabhautic composition, explanation of Dravya, Aushadha and utilization of Aushadha and Ahara Dravya in Healthy and diseased state. Ekamulika dravya proyoga, Bhaishjya Prayog Siddhant (Principles of drug administration)	6
04	Basic Principles of Dravyaguna	Definition of Dravyaguna, theory of Dravyaguna-Sapta Padarthas, Principles in Dravya research, in guna research (Rasa- Guna - Vipaka-Virya - Karma. )	6
05	Standardization of methods and techniques relevant to the research topic.	Ancient method in Dravyaguna research, Modern method of Dravyaguna research. Tools and modern techniques in dravya (drugs substances) research.	10
06	Essential of Pharmacognosy	Identification of Aushadha Dravya (drugs substances) as described in classical texts of Ayurveds. Modern methods of identification of plant drugs of selective ten drugs allotted to the students. International Code of Botanical Nomenclature (ICBN) and the International Code of Nomenclature for Cultivated Plants (ICNCP), Key identifying characters of Family and species of medicinal plants used in Ayurveda with examples	20
07	Uses of medicinal plants in other traditional health care system of world.	Definition of traditional system of medicine as define by World Health Organization (WHO), knowledge of selected 25 medicinal plants used in other traditional system of medicine.	4
08	Regulation and	Knowledge of drugs and cosmetic act 1940,	6

	laws related to the use of medicinal plants as health care intervention modalities.	regulation on imposed ASU drugs under drugs and cosmetic act 1940 example- Drugs and Magic Remedies Act, Biodiversity act etc.	
09	Analytical methods-	Thin Layer Chromatography (TLC), High Performance Thin Layer Chromatography (HPTLC), High Performance Liquid Chromatography (HPLC) and Gas Liquid Chromatography (GLC)	6
10	Basics of Pharmacology and experimental pharmacology	Basic pharmacology and Experimental studies for evaluation of various pharmacological activities of herbs , Formation and Functions of Institutional Animal Ethical Committee, , LD 50 study, D&C, OECD and other national and International guidelines for acute and chronic toxicity, specific toxicity (dermal, genotoxicity, reproductive toxicity etc.). Methodology of studying Elemental toxicology in <i>invitro / invivo</i> , CPCSEA guidelines.	15
11	Clinical Pharmacology	Formation and Functions of Institutional Human Ethical Committee clinical pharmacology, clinical drug research as per GCP guide lines, Pharmacogenomics,  New drug development methodology and guidelines.  Phase IV – Pharmaco-epidemiological studies, Post marketing surveillance and dose determination	4
12	Knowledge of Pharmacovigilance,	Pharmacovigilance definition, Implementation, Pharmacovigilance centers, Adverse Drug Reaction, Adverse Drug Event, Side effects, How to report ADR Ayurvedic concept of Pharmacovigilance, Benefits of implementation of Pharmacovigilance of Ayurvedic drugs, Difficulties in implementation of Pharmacovigilance of Ayurvedic drugs, Role of Pharmacovigilance centers in educating general public regarding expected side effects of Ayurvedic formulations.	6
13	Identification of Adultration and substitution	Study of morphological and microscopic characteristics of adulterant/alternate / substitute plant drugs	4
14	Shodhana / purification of drugs and Visa Dravya	Ayurvedic methods of shodhana / purification of drugs and recent researches on it. Scientific basis of use of media in shodhana of visa dravya. Scientific basis of use of Visa dravya, as a medicine, after their	6

		Shodhana process	
15	Knowledge of Nigahntus	Knowledge of ancient, medieval and recent Nighantus	4
16	Patenting and Intellectual Property Rights	Patenting and Intellectual Property and policies related to drug control.	4
17	Pharmacopoeias and Formulary	National and International Pharmacopoeias and formularies , knowledge for development of monograph	4
18	Misslaneous	General awareness on poshaka ahara(Nutraceuticals), Varnya(cosmoceuticals), food additives, Excipients, plant extracts, colors, flavors and preservatives	6