## Ph.D. Course Work Syllabus in Pharmaceutical Sciences (2016-17) One Semester

Paper I

Advanced Research Methodology

Paper II Review of Literature, Advanced Research Tools & Seminar

1	per I: Advanced Research Methodology  RESEARCH		
0	Definition of research, Applications of research and types, Research process and steps.  Literature review: Importance of literature	6L	
	Literature review: Importance of literature and types, Research process and steps.		
	Literature review: Importance of literature review, methods and sources of literature review, Review the literature selected, Development of a theoretical and conceptual framework, writing up the review		
	framework, writing up the review.		
2	RESEARCH DESIGN		
	Design of Experiments: Objective	121	, 2
	Design of Experiments: Objectives, strategies, Experimental design, Simple Comparative Experiments-Basic statistical concepts sample manufactures.		
	Experiments-Basic statistical concepts, sample mean and variance, random variable, correlation and regression, standard normal distribution		
	correlation and regression, standard normal distribution, statistical hypothesis, degrees of freedom, Two sample <i>t</i> -test, <i>F</i> -test <i>Chi-squara</i> test, <i>P</i> yelves <i>G</i> .		
	freedom, Two sample <i>t</i> -test, <i>F</i> -test, <i>Chi-square</i> test, <i>P</i> -value, Confidence Intervals, Paired <i>t</i> -test.		
	Single Factor Experiment A. L.		
	Single Factor Experiment: Analysis of Variance (ANOVA) for fixed effect model; ANOVA for Randomized complete block design to control of the c		+
	ANOVA for Randomized complete block design to control effects of nuisance factors.  Two Factor Factorial Design: Paging definitions of the factors of the factor of the fa		
	Two Factor Factorial Design: Basic definitions and principles, main effect and interaction, response surface and contour plate.		+
	factorial design; Models-Effects, means and regression.  RESEARCH PROPOSAL		
	An Introduction D	12L	20
	An Introduction: Preamble, problem, objectives, hypothesis to be tested, design of study, measurement procedures, analysis of data organization of the problem.	121	21
	measurement procedures, analysis of data, organization of report, Displaying data tables		
	Writing a wasse I		
	Writing a research report: General consideration, Prewriting considerations, Thesis writing, Formats of report writing Formats of publications.		-
		12L	20
	Indian Patent Act 1970, its amendments, concepts of IPR, criteria for granting patents and filing a Indian patent. Introduction to Patent Search	121	20
	filing a Indian patent, Introduction to Patent Search.		
	ICH guidelines, GMP GLP LISEDA CTD 150 0000 TOXA 0550		The state of the s
	of Standardization of law material and finished		
	PHARMACEUTICAL ANALYSIS		
	Principles and applications of the following: At	12L	20
	Principles of NMR, ESR, Mass spectroscopy, X-ray diffraction analysis, malditof and different chromatographic techniques and methods. The latest Techniques and methods.		
	different chromatographic techniques and methods, Thermal Techniques. Microscopy		
	Techniques. Microscopy		
	COMPUTATIONAL ANALYSIS		
	introduction to the creation and advancement of detahans I is	6L	10
	Applications of Microsoft excel for quantitative and attained to be		
	Advanced Research Tools— Exposure to SPSS, Design expert, Systat, SigmaPlot, WinNonlin, Kinetica and Pk analyst software		
	WinNonlin, Kinetica and Pk analyst software.		

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Approved in meeting of Board of Studies in Faculty of Technology, Sub: Pharmacy Dt. June 07, 2016

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Paper II Review of Liv		Page
Review of Literature, Advanced Research Tools & Seminar  Review of Literature – Writing review of literature in the Drogram		
Prostatile in the area Cal	24 L	40
Advanced Research Tools- Exposure to design expert, Systat, Sigma Plot and Seminar – Based on the review of literature;	12 L	20
die review of literature;	24 L	40

Note: The candidate must obtain 50% or more marks to qualify in the course work.

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