

KADI SARVA VISHWA VIDYALAYA
K. B. INSTITUTE OF PHARMACEUTICAL EDUCATION AND RESEARCH
MASTER OF PHARMACY SYLLABUS
Effective from Session JUNE 2017
SPECIALIZATION: ALL SPECIALIZATIONS (COMMON FOR ALL)
SEMESTER-III & IV
SCHEME OF TEACHING

Course Code	Course	Credit Hours	Credit Points
MRM 301T	Research Methodology and Biostatistics*	4	4
-	Journal club	1	1
-	Discussion / Presentation (Proposal Presentation)	2	2
-	Research Work	28	14
Total		35	21

*NON-UNIVERSITY EXAMINATION

Course of study for M. Pharm. IV Semester (Common for All Specializations)

Course Code	Course	Credit Hours	Credit Points
-	Journal Club	1	1
-	Research Work	31	16
-	Discussion/Final Presentation	3	3
Total		35	20

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SEMESTER-III & IV
SCHEME OF EXAMINATION

Course Code	Course	Internal Assessment				End Semester Exams		Total Marks
		Continuous Mode	Sessional Exams		Total	Marks	Duration	
			Marks	Duration				
SEMESTER III								
MRM301T	Research Methodology and Biostatistics*	10	15	1 Hr	25	75	3 Hrs	100
-	Journal club	-	-	-	25	-	-	25
-	Discussion / Presentation (Proposal Presentation)	-	-	-	50	-	-	50
-	Research work*	-	-	-	-	350	1 Hr	350
Total								525
SEMESTER IV								
-	Journal club	-	-	-	25	-	-	25
-	Discussion / Presentation (Proposal Presentation)	-	-	-	75	-	-	75
-	Research work and Colloquium	-	-	-	-	400	1 Hr	400
Total								500

* NON-UNIVERSITY EXAMINATION

SUBJECT : RESEARCH METHODOLOGY & BIOSTATISTICS
SUBJECT CODE : MRM301T
SCOPE : Discussion of application of statistical principles and calculations in pharmacy. The unit builds the concept of experimental design and bio statistical data management in all aspects of pharmaceutical research.
OBJECTIVES: : By the end of the course the student should be able to

- Organize the research data.
- Present the data in proper manner.
- Make choice of statistical methods for data analysis.
- Apply principles of biostatistics.

LEARNING OUTCOMES: At the end of the unit students will be able to:

- Collect and organize data in scientific manner.
- Analyze the data with right statistical method.
- Apply regression analysis and ANOVA to research data obtained.
- Calculate parameters like LD₅₀, ED₅₀ etc.
- Apply design of experiment with set of variables.
- Interpret the results of data management and derive conclusion.
- Apply computer software for data management.

PREREQUISITES: Basic computer operations and Basic mathematics.

TEACHING AND EVALUATION SCHEME:

SUB CODE	TITLE OF SUBJECT	TEACHING SCHEME (HRS)			CREDITS	EVALUATION SCHEME				TOTAL MARKS
		T	P	TOTAL		INTERNAL		EXTERNAL		
						Theory	Practical	Theory	Practical	
MRM301T	Research Methodology & Biostatistics	4	-	4	4	25	--	75	--	100

Course content:

CH.NO	PARTICULARS	
1	General Research Methodology: Research, objective, requirements, practical difficulties, review of literature, study design, types of studies, strategies to eliminate errors/bias, controls, randomization, crossover design, placebo, blinding techniques.	20
2	Biostatistics: Definition, application, sample size, importance of sample size, factors influencing sample size, dropouts, statistical tests of significance, type of significance tests, parametric tests (students “t” test, ANOVA, Correlation coefficient, regression), non-parametric tests (wilcoxon rank tests, analysis of variance, correlation, chi square test), null hypothesis, P values, degree of freedom, interpretation of P values.	20
2	Medical Research: History, values in medical ethics, autonomy, beneficence, non-maleficence, double effect, conflicts between autonomy and beneficence/non-maleficence, euthanasia, informed consent, confidentiality, criticisms of orthodox medical ethics, importance of communication, control resolution, guidelines, ethics committees, cultural concerns, truth telling, online business practices, conflicts of interest, referral, vendor relationships, treatment of family members, sexual relationships, fatality.	20
3	CPCSEA guidelines for laboratory animal facility: Goals, veterinary care, quarantine, surveillance, diagnosis, treatment and control of disease, personal hygiene, location of animal facilities to laboratories, anesthesia, euthanasia, physical facilities, environment, animal husbandry, record keeping, SOPs, personnel and training, transport of lab animals.	20
4	Declaration of Helsinki: History, introduction, basic principles for all medical research, and additional principles for medical research combined with medical care.	20

SUBJECT : JOURNAL CLUB
SUBJECT CODE :
RATIONALE : This unit is complementary to compensate the boundless content of theory syllabus. It includes all aspects of core subject specialization which tangentially touch the content of syllabus. (It does not include routine syllabus topics) All research and reviewed articles along with reference books are taken as basis for preparing a seminar. Innovative topics are ensured in each session.

COURSE OBJECTIVES : At the end of the course the student should be able to:

- Develop knowledge to refer literature for given topic. Literature search include key words,
- Library use and internet use.
- Develop presentation skills.
- Get peripheral knowledge of the subject with current perspective.

LEARNING OUTCOMES: At the end of the course the student will be able to:

- Find any reference related to the theme.
- Have presentation skills in terms of precise and contented, relevant presentation.
- Identify current perspectives related to the subject.

PREREQUISITES: None

TEACHING AND EVALUATION SCHEME:

SUB CODE	TITLE OF SUBJECT	TEACHING SCHEME (HRS)			CREDITS	EVALUATION SCHEME				TOTAL MARKS
		T	P	TOTAL		INTERNAL		EXTERNAL		
						Theory	Practical	Theory	Practical	
--	Journal Club	-	1	1	1	--	25	--	--	25