



YENEPOYA

(DEEMED TO BE UNIVERSITY)

Recognized under Sec 3(A) of the UGC Act 1956
Accredited by NAAC with 'A' Grade

Faculty of Pharmacy
Ph.D. Program
Paper I

Curriculum/Syllabus
(Revised)

Centre Ph.D. Program
Yenepoya (Deemed to be University)
Deralakatte, Mangalore -575 018
Karnataka, India

ATTESTED


Dr.Gangadhara Somayaji K.S.
Registrar
Yenepoya(Deemed to be University)
University Road, Deralakatte
Mangalore-575 018, Karnataka

Ref:No.Y/REG/ACA/39-ACM/2020

09.09.2020

NOTIFICATION – 39-ACM/20/2020 dtd. 09.09.2020

Sub: Faculties for Admission to PhD program

Ref: Resolution of Academic Council at its 39th meeting held on 27.08.2020,
vide agenda - 20

The Academic council at its 39th meeting held on 09.09.2020 and subsequently the Board of Management at its 50th meeting held on 28.08.2020 have resolved that admission to PhD program will be made under the following faculties with effect from 09.09.2020

1. Faculty of Medicine
2. Faculty of Dentistry
3. Faculty of Nursing
4. Faculty of Pharmacy
5. Faculty of Ayurveda
6. Faculty of Homeopathy
7. Faculty of Science
8. Faculty of Allied Healthcare Professions
9. Faculty of Commerce and Management
10. Faculty of Art and Social Sciences

PhD scholars registered prior to the date of this notification under the Faculty of Allied Health and Basic Sciences and Faculty of Arts, Science, Commerce and Management shall continue under the same faculties.



REGISTRAR

To,

Dy. Director, MPhil PhD Programme

Copy to:

1. Controller of Examinations
2. File copy

Ref: No. Y/REG/ACA/38-ACM/2020

14.05.2020

NOTIFICATION – 38-ACM/13/2020 dtd. 14.05.2020

Sub: Revision in the syllabus of Paper-I, Research Methodology
for Pre-Ph.D course work

Ref: Resolution of the Academic council at its 38th meeting held on
27.04.2020, vide agenda - 24

The Academic Council at its 38th meeting held on 27.04.2020 and subsequently the Board of Management at its 49th meeting held on 30.04.2020 have resolved to approve the proposal for revision in the syllabus of Paper-I, Research Methodology for Pre Ph.D course work for all faculties:-

1. Faculty of Medicine
2. Faculty of Dentistry
3. Faculty of Nursing
4. Faculty of Allied Health and Basic Sciences
5. Faculty of Pharmacy
6. Faculty of Arts, Science, Commerce And Management
7. Faculty of Ayurveda
8. Faculty of Homeopathy


REGISTRAR
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To,

Dy. Director, MPhil Ph.D Programme

Copy to:

1. Controller of Examinations
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RESEARCH METHODOLOGY

NOTE: The content given by UGC is Unit 3 and in bold

Total hours : 30 hours

Credits : 2

Unit 1. Introduction to Research: General

(8 hours)

- ❖ Definition, significance of research & importance
- ❖ Kinds and purposes of Research: Diagnostic, Descriptive, Exploratory, Explanatory
- ❖ Research approaches
- ❖ Criteria of good research
- ❖ Research process : components
- ❖ Types of Research: Quantitative, qualitative, basic and applied

General Topics

- ❖ Guidelines for Research ICMR, WHO, Nursing
- ❖ Research Ethics – Animal ethics; Human ethics
- ❖ Biosafety : Good Lab Practices,

Unit 2. Literature survey; Proposal writing

(4 hours)

- ❖ Types of Literature search – use of library, books & journals – Medlines, internet, getting patents and article reprints as a source of literature survey
- ❖ Review of Literature– Identification and selection of research problems, formulation of Hypothesis
- ❖ Preparation of research proposal, synopsis.
- ❖ Research Proposal for grants - components
- ❖ IPR and patents

Unit 3. Research and Publication Ethics (RPE)

RPE 01: Philosophy and ethics

(2 hours)

- ❖ **Introduction to philosophy: definition, nature and scope, concept, branches**
- ❖ **Ethics: definition, moral philosophy, nature of moral judgements and reactions**

RPE 02: Scientific Conduct

(4 hours)

- ❖ **Ethics with respect to science and research**
- ❖ **Intellectual honesty and research integrity**
- ❖ **Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP)**
- ❖ **Redundant publications: duplicate and overlapping publications, salami slicing**
- ❖ **Selective reporting and misrepresentation of data**

RPE 03: Publication Ethics

(3 hours)

- ❖ **Publication ethics: definition, introduction and importance**
- ❖ **Best practices/standards setting initiatives and guidelines: COPE, WAME, etc.**
- ❖ **Conflicts of interest**
- ❖ **Publication misconduct: definition, concept, problems that lead to unethical**

behaviour and vice versa, types

- ❖ **Violation of publication ethics, authorship and contributionship**
- ❖ **Identification of publication misconduct, complaints and appeals**
- ❖ **Predatory publishers and journals**

RPE 04: Open Access publishing (3 hours)

- ❖ **Open access publications and initiatives**
- ❖ **SHERPA/RoMEO online resource to check publisher copyright & self - archiving policies**
- ❖ **Software tool to identify predatory publications developed by SPPU**
- ❖ **Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.**

RPE 05: Publication Misconduct (4 hours)

A. Group discussions

- ❖ **Subject specific ethical issues, FFP, authorship**
- ❖ **Conflicts of interest**
- ❖ **Complaints and appeals: examples and fraud from India and abroad**

B. Software tools

Use of plagiarism software like Turnitin, urkund and other open source software tools

RPE 06: Databases and Research Metrics (3 hours)

A. Databases

- **Indexing databases**
- **Citation databases: Web of Science, Scopus, etc.**

B. Research Metrics

- **Impact factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score**
- **Metrics: h-index, g index, i10 index, altmetrics**

Recommended Books:

1. Ahuja R. Research Methods. Rawat Publications; 2001. 454 p.
2. Creswell JW. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Erscheinungsort Nicht Ermitteltbar: SAGE Publications Ltd.; 2013.
3. Denicolo P, Becker LM. Developing research proposals. Los Angeles: Sage; 2012.
4. Gastel B, Day RA. How to write and publish a scientific paper. Cambridge: Cambridge university press.; 2017.
5. Gupta M, Gupta D. Research methodology. PHI Learning Pvt Ltd.; 2011.
6. Gupta S. Research methodology and statistical techniques. New Delhi: Deep & Deep Publications; 2003.
7. Indrayan A. Research methods for medical graduates. Boca Raton, FL: CRC Press, Taylor & Francis Group; 2020.
8. Kothari CR, Garg G. Research methodology: methods and techniques. 4th ed. New Delhi: New Age International (P) Limited, Publishers; 2019.
9. Kumar CR. Research methodology. New Delhi: APH Publishing Corporation; 2012.
10. Kumar R. Research methodology: a step-by-step guide for beginners. London: SAGE; 2019.

12. Macrina FL. Scientific integrity: Text and cases in responsible conduct of research. 4th ed. Washington, D.C: ASM Press; 2014.
13. Mogli GD. Patient care research. New Delhi: Jaypee Brothers Medical Publishers; 2014.
14. Pannerselvam R. Research Methodology. 2nd ed. PHI Learning; 2004.
15. Polit DF, Beck CT. Nursing research: principles and methods. 7th ed. Philadelphia, Penns.: Lippincott Williams & Wilkins; 2004.
16. Taylor B, Sinha G, Ghoshal T. Research methodology: a guide for researchers in management and social sciences. PHI Learning Private Limited: 2011.
17. Gallagher J, Gorovitz, S. Levine RJ. Biomedical research ethics updating international guidelines : a consultation. World Health Organization;2000
18. Glannaon W. Biomedical Ethics (Fundamentals of Philosophy Series). Oxford University Press; 2004, 176p.
19. Winslade W, Siegler M, Jonsen A . Clinical Ethics : a practical approach to ethical decisions in clinical medicine.8th ed. McGraw-Hill Education;2015
20. Lock S, Wells F. Fraud and misconduct in Biomedical research. 3rd ed. BMJ Books; 2001
21. Crigger B. Cases in Bioethics: Selections from the theHastings Centre report.3rd ed. Bedford; St. Martins;1998
22. Gallagher J, Gorovitz, S. Levine RJ. Biomedical research ethics updating international guidelines : a consultation. World Health Organization;2000
23. Eckenwiler LE. Cohn FG. Ethics of bioethics mapping the moral landscape. JHUP;2007
24. Altman E, Hernon P. Research Misconduct:issues implications and strategies. Praeger; 1997
25. Goyal RC. Research Methodology for Health Professionals. :including proposal, Thesis and article writing.New Delhi: Jaypee Brothers Medical Publishers;2013

Ph.D. Course Work

Syllabus Biostatistics

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Unit 1. Basic concepts and descriptive statistics: (6 hours)

- **Lecture -1:** Definition of statistics & biostatistics, population and sample, parameter and statistics; variables – different types, scales of measurement
- **Lecture -2:** Types of data: qualitative and quantitative; tabulation of data - one-way and two-way tables, frequency table; visualization of data – diagrams and graphs
- **Lecture -3:** Measures of central tendency : Mean, median,
- **Lecture -4:** mode; partition values – quartiles, percentiles
- **Lecture -5:** Measures of variability: Range, inter-quartile range, standard deviation, mean deviation and coefficient of variation.
- **Lecture -6:** Measures of skewness and kurtosis; Box plot and its application

Unit 2. Sampling techniques and Probability distributions (8 hours)

- **Lecture -7 :** Notion of a random variable, probability and probability distribution
- **Lecture -8 :** Normal probability distribution , properties of normal probability curve, applications of normality, divergence from normality, checking normality
- **Lecture -9:** Sampling techniques: random sampling- simple random, stratified sampling , systematic sampling,
- **Lecture 10 :** Cluster sampling; non random sampling, sample size determination

Unit 3. Testing of hypothesis (10 hours)

- **Lecture -10:** Estimation of population parameters, standard error
- **Lecture -11:** Principles of hypothesis testing: Null and alternate hypothesis, type-I and type -II error, power of the test, test statistic, p - value.
- **Lecture -12:** Parametric tests: Z test, t-test, F-test: applications of these tests
- **Lecture -13:** One way ANOVA , repeated measures ANOVA
- **Lecture -14:** Non-Parametric tests : Chi-Square test, Mann- Whitney test, Wilcoxon Sign rank test, Kruskal - Wallis test.

Unit 4: Correlation & Regression Techniques: (08 hours)

Lecture -15:Correlation: scatter diagram, types of correlation

Karl Pearson's Product Moment Correlation Coefficient (r)

Spearman's Rank-order Correlation Coefficient (rho)

Lecture -16Linear regression analysis, Introduction to logistic regression

Diagnostic tests & reliability tests

- **Lecture -19:**Sensitivity, Specificity, Positive predictive value, Negative predictive value, False positive rate, False negative rate, Odds ratio.
- **Lecture -20:**Reliability & Validity, Measures of agreement: kappa statistics, intra- class correlation coefficient(ICC).

NOTE: Statistical software SPSS will be taught along with theory.

Reference Books:

1. Wayne Daniel Biostatistics: A Foundation for Analysis of Health Sciences-; John Wiley and Sons, Inc.;2009.
2. Olive Jean Dunn & Virginia A. Clark Basic Statistics:A Primer for the Biomedical Sciences John Wiley & Sons,2009
3. Jennifer Peat and Belinda Barton Medical Statistics: A Guide to Data Analysis and Critical Appraisal, Blackwell publishing, BMJ Books, 2004
4. Introductory Biostatistics : Chap T.Le, Wiley Interscience,2003
5. .D.V.Swinscow and M.J. Campbell, Statistics at Square One - 10th Edition, BMJ Books,2002
6. Bernard Rosner ,Fundamentals of Biostatistics -, 7th Edition, Brooks/Cole,2010

AGENDA

Sub: Proposed revision of the Pre-Phd Course Work - Syllabus for Research Methodology in accordance with the UGC Notification - Reg.

Ref: D.O.No.F.1-1/2018 (Journal/CARE) dated December 2019

The syllabus for the Research methodology is revised as per the UGC notification (ref.)

PRE-PHD COURSE WORK - SYLLABUS FOR RESEARCH METHODOLOGY

Total hours : 30 hours

Credits : 2

Sl. No.	Present Syllabus	Proposed revision	Change in the syllabus
1.	Unit 1. Introduction to Research: General (8 hours) ❖ Definition, need ❖ Kinds and purposes of Research: Diagnostic, Descriptive, Exploratory, Explanatory ❖ Research approaches ❖ Significance of research & importance ❖ Criteria of good research ❖ Research process : components ❖ Types of Research: Quantitative, Qualitative, Basic and applied	Unit 1. Introduction to Research: General (8 hours) ❖ Definition, significance of research & importance ❖ Kinds and purposes of Research: Diagnostic, Descriptive, Exploratory, Explanatory ❖ Research approaches ❖ Criteria of good research ❖ Research process : components ❖ Types of Research: Quantitative, qualitative, basic and applied	

	<p>General Topics</p> <ul style="list-style-type: none"> ❖ Guidelines for Research ICMR, WHO, Nursing ❖ Research Ethics – Animal ethics; Human ethics ❖ Biosafety : Good Lab Practices, Scientific integrity and code of conduct; Plagiarism <p>Unit 2. Literature survey; Proposal writing (6 hours)</p> <ul style="list-style-type: none"> ❖ Types of Literature search – use of library, books & journals – Medlines, internet, getting patents and article reprints as a source of literature survey ❖ Review of Literature– Formulation of Hypothesis ❖ Identification and selection of research problems, preparation of research proposal, synopsis. ❖ Research Proposal for grants-components ❖ IPR and patents 	<p>General Topics</p> <ul style="list-style-type: none"> ❖ Guidelines for Research ICMR, WHO, Nursing ❖ Research Ethics – Animal ethics; Human ethics ❖ Biosafety : Good Lab Practices <p>Unit 2. Literature survey; Proposal writing (4 hours)</p> <ul style="list-style-type: none"> ❖ Types of Literature search – use of library, books & journals – Medlines, internet, getting patents and article reprints as a source of literature survey ❖ Review of Literature– Identification and selection of research problems, formulation of Hypothesis ❖ Preparation of research proposal, synopsis, ❖ IPR and patents 	<p>These topics are there in Unit 3 Scientific integrity and code of conduct; Plagiarism</p> <p>Deleted Research Proposal for grants- components since it is repeated.</p>
	<p>Unit 3. Research Design; Study design (6 hours)</p> <ul style="list-style-type: none"> ❖ Basic Concepts of Research Design & selection of research design 	<p>Unit 3. Research and Publication Ethics (RPE)</p> <p>RPE 01: Philosophy and ethics (2 hours)</p> <ul style="list-style-type: none"> ❖ Introduction to philosophy: definition, 	<p>Units 3, 4 and 5 are replaced in the existing syllabus with the content given by UGC</p>

	<ul style="list-style-type: none"> ❖ Classification and types : Experimental, Pre-experimental, Quasi-Experimental designs and Non - experimental ❖ Historical design, Descriptive design, case control, cohort, cross sectional, longitudinal <p>Unit 4. Data Collection Techniques and Interpretation (6 hours)</p> <ul style="list-style-type: none"> ❖ Types of Data. ❖ Data Collection methods: Interview; Observation; Questionnaire ❖ Developing tools – Validity (internal & external), Reliability of the tools. <p>Unit 5. Research Reporting</p> <p>Scientific Writing: (6 hours)</p> <ul style="list-style-type: none"> ❖ General structure of scientific reports :- IMRAD; Different types of scientific documents - journal articles, books, thesis, conference and project reports ❖ Components of a research paper - abstract, key words, main text, illustrations, supporting information; Publication process, copyright transfer. Open access 	<p>nature and scope, concept, branches</p> <ul style="list-style-type: none"> ❖ Ethics: definition, moral philosophy, nature of moral judgements and reactions <p>RPE 02: Scientific Conduct (4 hours)</p> <ul style="list-style-type: none"> ❖ Ethics with respect to science and research ❖ Intellectual honesty and research integrity ❖ Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP) ❖ Redundant publications: duplicate and overlapping publications, salami slicing ❖ Selective reporting and misrepresentation of data <p>RPE 03: Publication Ethics (3 hours)</p> <ul style="list-style-type: none"> ❖ Publication ethics: definition, introduction and importance ❖ Best practices/standards setting initiatives and guidelines: COPE, WAME, etc. ❖ Conflicts of interest ❖ Publication misconduct: definition, concept, problems that lead to unethical behaviour and vice versa, types ❖ Violation of publication ethics, authorship and contributionship ❖ Identification of publication misconduct, complaints and appeals ❖ Predatory publishers and journals 	<p>Research and Publication Ethics (RPE)</p>
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	<p>terms</p> <ul style="list-style-type: none"> ❖ Thesis: Structure and Content; ❖ Style manuals with examples (Harvard, Vancouver, APA, MLA); Citation styles: reference writing ❖ Evaluation of research reports/papers- Criteria: novelty, originality, adequacy of information, responsibility, limitations, etc. 	<p>RPE 04: Open Access publishing (3 hours)</p> <ul style="list-style-type: none"> ❖ Open access publications and initiatives ❖ SHERPA/RoMEO online resource to check publisher copyright & self - archiving policies ❖ Software tool to identify predatory publications developed by SPPU ❖ Journal finder/journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc. <p>RPE 05: Publication Misconduct (4 hours)</p> <p>A. Group discussions</p> <ul style="list-style-type: none"> ❖ Subject specific ethical issues, FFP, authorship ❖ Conflicts of interest ❖ Complaints and appeals: examples and fraud from India and abroad <p>B. Software tools</p> <p>Use of plagiarism software like Turnitin, iThenticate and other open source software tools</p> <p>RPE 06: Databases and Research Metrics (3 hours)</p> <p>A. Databases</p> <ul style="list-style-type: none"> • Indexing databases • Citation databases: Web of Science, Scopus, etc. 	
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		Science, Scopus, etc. B. Research Metrics • Impact factor of journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score • Metrics: h-index, g index, i10 index, altmetrics	
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Sd/- Dr. Gangadhara Somayaji K. S.
Registrar
Yenepoya (Deemed to be University)

Pre-PhD coursework

SCHEME OF PH.D. COURSE WORK, EXAMINATION, EVALUATION AND DECLARATION OF RESULTS (CLAUSE NO. 07)

1. The scheme for PhD Course Work Examination to be conducted by the University shall be as follows:
 - a) Two written papers (I and II) each of three hours duration and each carrying maximum of 100 marks and
 - b) Paper III involving review of Literature and Planning and presentation of the synopsis of the Proposed Research Work with a Tentative Title (200 marks)

Papers	Particulars	No. of Credits	Marks
Paper 1	Research Methodology and Biostatistics	4	100
Paper 2	Theoretical Foundations	4	100
Paper 3	Reviewing of Literature and Planning of the Proposed Research Work with a Tentative Title	4	200
	Total	12	400

Ph.D. Course Work Examination

The scheme of marks

Papers	Particulars	No. of Credits	Maximum marks		
			Theory*	Internal assessment	Total
Paper 1	Research Methodology and Biostatistics	4	70	30	100
Paper 2	Theoretical Foundations	4	70	30	100
Paper 3	Reviewing of Literature and Planning of the Proposed Research Work with a Tentative Title	4	-	-	200
	Total	12	-	-	400

**Theory conducted out of 100 marks and brought down to 70*

Paper I Internal assessment calculation

Total marks : 30

Activity	No conducted	Maximum marks /each	Brought down
1. Internal assessment examination	Two	60	20
2. Journal club	Two	50	10
3. Class tests / Class activity	Nine	30	
4. Assignments	Ten	10	
5. Presentation of an E-Poster	One	50	
6. Review article (review of literature)	One	100	
7. Review of "Research	Once	100	

proposal for funding agency”			
8. Presentation of the review of literature	Once	10	

Ph.D. Course Work Examination

Ph.D. Course Work Examination will be conducted at the end of the course work as follows

Dates of the Pre-Ph.D. examination shall be notified by the Controller of Examinations

PAPERS FOR THE EXAMINATION :

Paper I	Research Methodology & Biostatistics	duration : 3 hrs	Marks 100
Paper II	Theoretical Foundations	duration : 3 hrs	Marks 100
Paper III	Synopsis preparation and presentation		Marks 200

PATTERN OF QUESTION PAPER I :

Paper I Research Methodology (60 marks)

- MCQ 15 No.'s X 1 mark
- Short essay : 5 No.'s X 5 marks
- Long Essay : 2 No.'s X 10 marks

Biostatistics (40 marks)

- MCQ : 10 No.'s × 1 mark
- Short essay : 4 No.'s × 5 marks
- Long Essay : 1 No.'s × 10 marks

Panel of Examiners for Paper I :

Internal Examiner (1) Appointed from Yenepoya (Deemed to be University)

External Examiner (1) Appointed from other Universities

PAPER II:

Pattern of Paper II : Subject related to the field of research (100 marks)

Long Essays : 5 No.'s × 20 marks

Classification of Successful Candidates:

The results of successful candidates at the end of the course work shall be classified on the basis of the Grade Point Average (GPA) obtained in all the papers. The Grade Point (GP) in a paper and the Grade Point Average (GPA) at the end of the course work shall be computed as follows:

The grade points (GP) in a paper shall be assigned on the basis of actual marks scored in that course as per the table below:

% Marks	Less than 55	55	56<60	61<65	66<70	71<75	76<80	81<85	86<90	91<95	96<100
Grade Points	Fails	5.5	6	6.5	7	7.5	8	8.5	9	9.5	10

The Grade Point Weights (GPW) shall then be calculated as the product of the grade points earned in the paper and the credits for the paper. The total GPW for a course is obtained by adding the GPW of all the papers.

The GPA shall then be computed by dividing the total GPW of all the papers of study by the total credits for the course.

A Ph.D. scholar has to obtain a minimum of 55% of marks or its equivalent GPA of 5.5, in the UGC 7 - point scale in the course work in order to be eligible to continue in the programme and submit the dissertation/thesis.

In case the candidate is not successful in the Ph.D. Course Work Examination in the first attempt, he/she may be given one more chance to appear for the paper in which the candidate has failed anytime when the next the examination is scheduled on payment of the requisite fees of Rs. 500/-. If the candidate is not successful in the PhD Course Work Examination, even in the second appearance, his/her provisional registration shall stand cancelled. Registration of the candidate will be confirmed only after they pass the Ph.D. Course Work Examination.

Faculty of Pharmacy

PhD Program
Paper II

Curriculum/Syllabus

University Road,
Deralakatte,
Mangalore – 575018
Ph: 0824-2204676/68/69/71
Fax: 0824-2203943

PhD Program Faculty of Pharmacy

Paper II

The Paper II in the PhD Program is subject specific. The syllabus for the subject is prepared by the Research Guide in consultation with doctoral advisory committee. Accordingly, each candidate shall have separate syllabus based on the research topic.

Candidate wise research topic and syllabus for Paper II is compiled and presented here on.

Vinitha R. Pai
Vinitha Ramanath Pai, PhD
Deputy Director, MPhil and PhD Program
Yenepoya (Deemed to be University)

Deputy Director M. Phil & Ph. D. Pr.
Yenepoya University
Mangalore-575 018

2020-21

“Paper II - Curriculum /Syllabus ”



Faculty of Pharmacy Paper II - Syllabus

Sl.No	Name & Reg. No of the Ph.D Scholars	Name of the Topic	Curriculum Page No.
1.	Mrs. Deeksha Rai 518/Jan 2021	Formulation and evaluation of Novel Topical dosage form of Herbal Drugs for Antiacne Activity	22-23
2.	Ms. Umaima Farheen Khaiser 485/July 2020	A interventional study for improving health and reducing cost of treatment in geriatric population with poly pharmacy prescription	24
3.	Ms. Prajitha Biju 489/July 2020	Formulation and evaluation of vesicular deliver of lulicanazole incorporated into carbopol gel	25-26
4.	Ms. Ruheena Tabassum 491/July 2020	Protective effect of <i>AndrographisPaniculata</i> and <i>pupaliaLappaceaon</i> TNBS induced Inflammatory Bowel Disease in Experimental Rates	27-28
5.	Ms. Tahreen Taj 493/July 2020	Evaluation of neuroprotective activity of Aporosa lindleyana root extract in mice	29-30
6.	Mr. Jaswanth Gowda B.H 495/July 2020	Formulation and evaluation of dacarbazine loaded hydrogel- forming microneedles as a transdermal delivery system to treat malignant melanoma	31-32
7.	Ms. Juveriya 496/July 2020	Evaluation of Thymoquinone and Hesperidin treatment against Ifosfamide and 5-flourouracil induced toxicities	33-34
8.	Ms. Haleema Shahin D.H. 314/July 2018	Evaluation of Pharmacokinetic & Pharmacodynamic Interaction of gallic acid and ellagic acid with verapamil	35-36

Subject in which work is proposed: Pharmacognosy (Pharmacy)

Proposed title of the research: Formulation and Evaluation of Novel Topical Dosage Form of Herbal Drugs for Antiacne Activity

Syllabus for Pre Ph.D Examination Paper II

Paper II – Theoretical foundations

Total hours: 65

Pharmacology & Pharmacognosy

Unit 1 General Pharmacognosy: 15hrs

1. Standardization of extracts, Extraction techniques
2. WHO guidelines
3. Phytochemical screening
4. Application of latest techniques like Spectroscopy, Chromatography and electrophoresis in the isolation, purification and identification of crude drugs.

Unit II: Basic Pharmacology 10hrs

1. Introduction, definition, nature and sources of drugs, Drug nomenclature.
2. Principles of pharmacokinetics: i.e., Absorption, distribution, metabolism and excretion of drugs, Drug interactions and adverse drug reactions. Principles of pharmacodynamics
3. Cell line studies

Unit III Pathophysiology & Pharmacology of diseases: 15hrs

1. Anti Acne
2. Anti-inflammatory
3. Anti- ulcer drugs.
4. Drug used in Rheumatoid arthritis.
5. Drugs used as Anti oxidant agent

Unit IV Pharmacological drug Screening methodology 10hrs


1. Anti Acne agents
2. Antioxidant agents
3. Analgesic agents.
4. Anti-ulcer agents.
5. Anti-inflammatory agents.


Unit V Introduction to Experimental Pharmacology : 15hrs

1. CPCSEA guidelines – animal handling and animal care
2. Methods of anaesthetizing animals and methods of euthanasia
3. Blood collecting methods
4. Toxicity studies
5. New drug discovery and development process

References

1. Tripathi KD. In: Essentials of Medical Pharmacology, 7thedn. New Delhi: Jaypee Brothers Medical Publishers; 2013.
2. Satoskar RS, Nirmala N Rege, Bhandarkar SD, 23rdedn. Mumbai: Popular Prakashan; 2013.
3. Parasuraman S, Raveendran R, Kesavan R. Blood sample collection in small laboratory animals. 2010; 1(2): 87-93.
4. Medhi B. In: Practical Manual of Experimental and Clinical Pharmacology, 2ndedn. New Delhi: Jaypee Brothers Medical Publishers; 2017.
5. Mohan H. Textbook of pathology. Jaypee Brothers Medical Publishers; 2015.
6. Gupta SK. Drug screening methods. Jaypee Brothers; 2004.
7. Goodman LS. Goodman and Gilman's the pharmacological basis of therapeutics. New York: McGraw-Hill; 1996.
8. Richard F. Lippincott's Illustrated Reviews: Pharmacology 4th Edition
9. Waugh A, Grant A. Ross & Wilson Anatomy and physiology in health and illness E-book. Elsevier Health Sciences; 2014 Jun 25.
10. Katzung BG. Basic and clinical pharmacology. Mc Graw Hill; 2012.


8/11/21


8/11/21

Dr. Rokeya Sultana

Broad area of work: An interventional study for improving health and reducing cost of treatment in geriatric population with poly pharmacy prescription.

Syllabus for Pre Ph.D Examination Paper II

Paper II – Theoretical foundations

Total hours: 65 hrs

Pharmacy practice

Unit 1 General prescribing guideline for

1. Paediatric
2. Geriatric
3. Pregnancy and breastfeeding

Unit II: Therapeutic drug monitoring

1. Introduction
2. Individualization of drug dosage regimen (variability – genetic, age and weight, disease, interacting drugs)
3. Indications for TDM. Protocol for TDM
4. Pharmacokinetic/ pharmacodynamic correlation in drug therapy.
5. TDM of drugs used in following disease condition: cardiovascular disease, seizure disorders, Psychiatric conditions and organ transplantation.

Unit III: Introduction to rational drug use

1. Essential medicine, rationality of fixed dose combinations
2. Drug regulation acts and other legal aspects

Unit IV Pharmacovigilance

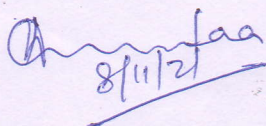
1. Scope, definition and aims of pharmacovigilance
2. Adverse drug reactions – classification, mechanism, predisposing factor, causality assessment
3. Reporting, evaluation, monitoring, preventing & management of ADR
4. Role of pharmacist in management of ADR.

Unit V Pharmacoeconomic evaluation

1. Outcome assessment and types of evaluation.
2. Includes theoretical aspects of various methods and practical study of various methods with the help of case studies for individual methods
3. Cost- minimisation, cost benefit, effectiveness cost utility

References

1. A textbook of Clinical pharmacy by Parthasarathi.
2. A textbook of pharmacy practice K G Ravikumar
3. Clinical pharmacokinetics – Roland and Tozer, Williams and Wilkins publication
4. Pathology and therapeutics for pharmacist : A Basis of clinical pharmacy practice – Green and Harris, Chapman and Hall publication


8/11/21

YENEPOYA (DEEMED TO BE UNIVERSITY)

Name of the Candidate: Mrs Prajitha Biju
Guide Name: Dr Pallavi K Shetty

Application No: 489/ July 2020
Subject: Pharmaceutical Science

Pre PhD Syllabus

Paper II

Unit- I Drug delivery systems **10 Hrs**

1. Concepts of various drug delivery system
2. Design of drug delivery system,
3. Formulation and evaluation of controlled release mucoadhesive and oral DDS.

Unit-II Transdermal drug delivery system **10 Hrs**

1. Theory of transdermal drug delivery,
2. Design of transdermal drug delivery,
3. Formulation and evaluation of transdermal drug delivery system

Unit-III Non peroral drug delivery **10 Hrs**

1. Different non-peroral route of drug delivery,
2. Factors affecting non-peroral route of drug delivery
3. Absorption mechanism of Topical route of administration

Unit- IV Nanoparticles and liposomes **10hrs**

1. Concept and importance involved in drug targeting
2. Formulation and evaluation of nanoparticles and liposomes
3. Characterization of nanoparticles and liposomes

Unit V polymeric material **10 Hrs**

1. Introduction to polymers
2. Characterization of polymers
3. Applications in Novel drug delivery system

Unit VI Optimization techniques in Pharmaceutical Formulation **10 Hrs**

1. Optimization: Concept and parameters of optimization,
2. Optimization techniques in pharmaceutical formulation and processing.

3. Statistical designs, Contour designs and Factorial designs.

REFERENCE

1. Y W. Chien, Novel Drug Delivery Systems, 2 nd edition, revised and expanded, Marcel Dekker, Inc, New York, 1992.
2. Robinson, J. R., Lee V.H.L, Controlled Drug Delivery Systems , Marcel Dekker, Inc., New York ,1992
3. Encyclopedia of Controlled delivery, Editor -Edith Mathiowitz, published by Wiley Interscience Publication, John Wiley and Sons, Inc, New York, Chichester Weinheim
4. N.K.Jain Controlled and Novel drug Delivery , CBS Publishers & Distributors ,New Delhi, First edition 1997 (reprint in 2001).
5. S.P.Vyas and R.K.Khar ,Controlled Drug Delivery -concepts and advances, Vallabh Prakashan, New Delhi, First edition 2002

JOURNALS

1. Indian Journal of Pharmaceutical Sciences (IPA)
2. Indian drugs (IDMA)
3. Journal of controlled release (Elsevier Sciences) desirable
4. Drug Development and Industrial Pharmacy (Marcel & Decker) desirable

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5/8/22

Ms. Ruheena

Dr. Rokeya

Broad area of work: Protective effect of Andrographis Paniculata and Pupalia Lappacea on TNBS induced inflammatory bowel disease in experimental rats

Syllabus for Pre Ph.D Examination Paper II

Paper II – Theoretical foundations

Total hours: 65

Pharmacology & Pharmacognosy

Unit 1 General Pharmacognosy: 15hrs

1. Standardization of extracts, Extraction techniques
2. Phytochemical screening
3. Application of latest techniques like Spectroscopy, chromatography and electrophoresis in the isolation, purification and identification of crude drugs.

Unit II: Basic Pharmacology 10hrs

1. Introduction, definition, nature and sources of drugs, Drug nomenclature.
2. Principles of pharmacokinetics: i.e., Absorption, distribution, metabolism and excretion of drugs, Drug interactions and adverse drug reactions.
Principles of pharmacodynamics

Unit III Pathophysiology & Pharmacology of diseases: 15hrs

- 1.
2. Ulcerative Colitis
- 3.

Unit IV Pharmacological drug Screening methodology 10hrs

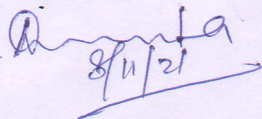
1. Anti- cancer agents.
2. Antidiabetic agents.
3. Antihypertensive agents.
4. Antipsychotic agents.
5. Analgesic agents.
6. Anti-ulcer agents.
7. Anti-inflammatory agents.

Unit V Introduction to Experimental Pharmacology : 15hrs

1. CPCSEA guidelines – animal handling and animal care
2. Methods of anaesthetizing animals and methods of euthanasia
3. Blood collecting methods
4. Toxicity studies
5. New drug discovery and development process

References

1. Tripathi KD. In: Essentials of Medical Pharmacology, 7thedn. New Delhi: Jaypee Brothers Medical Publishers; 2013.
2. Satoskar RS, Nirmala N Rege, Bhandarkar SD, 23rdedn. Mumbai: Popular Prakashan 2013.
3. Parasuraman S, Raveendran R, Kesavan R. Blood sample collection in small laboratory animals. 2010; 1(2): 87-93.
4. Medhi B. In: Practical Manual of Experimental and Clinical Pharmacology, 2ndedn. New Delhi: Jaypee Brothers Medical publishers; 2017.
5. Mohan H. Textbook of pathology. Jaypee Brothers Medical Publishers; 2015.
6. Gupta SK. Drug screening methods. Jaypee Brothers; 2004.
7. Goodman LS. Goodman and Gilman's the pharmacological basis of therapeutics. New York: McGraw-Hill; 1996.
8. Richard F. Lippincott's Illustrated Reviews: Pharmacology 4th Edition
9. Waugh A, Grant A. Ross & Wilson Anatomy and physiology in health and illness E-book. Elsevier Health Sciences; 2014 Jun 25.
10. Katzung BG. Basic and clinical pharmacology. Mc Graw Hill; 2012.


8/11/21

Broad area of work: Evaluation of neuroprotective activities of Apõrosa lindleyana root extract in mice.

Syllabus for Pre Ph.D Examination Paper II

Paper II – Theoretical foundations

Total hours: 65

Pharmacology

Unit 1 General Pharmacology:

15hrs

1. Introduction, definition, nature and sources of drugs, Drug nomenclature.
2. Principles of pharmacokinetics: i.e., Absorption, distribution, metabolism and excretion of drugs, Drug interactions and adverse drug reactions.
3. Principles of pharmacodynamics.

Unit II: Pharmacology of drug acting on ANS & CNS 10hrs

1. Neurohumoral transmission, co transmission.
2. Classification and importance of various neurotransmitters of ANS & CNS.
3. Drug addiction & abuse, tolerance and dependence

Unit III Pathophysiology & Pharmacology of diseases: 15hrs

1. Drug used for depression.
2. Drug used in Alzheimer disease
3. Anti- epileptics.
4. Drug used in Parkinson disease.
5. Antipsychotic agents.

Unit IV Pharmacological drug Screening methodology 10hrs

1. Anti-depression agents.
2. Anti-Alzheimer agents.
3. Antipsychotic agents.
4. Anti- Parkinson agents
5. Anti-epileptics agents.

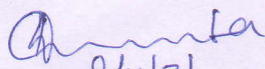
Unit V Introduction to Experimental Pharmacology:

15hrs

1. CPCSEA guidelines – animal handling and animal care
2. Methods of anaesthetizing animals and methods of euthanasia
3. Blood collecting methods and common route of drug administration in laboratory animals
4. Toxicity studies
5. New drug discovery and development process
6. Spectrophotometry: Principles, instrumentation, advantages, disadvantages
7. High performance liquid chromatography (HPLC)

References

1. Tripathi KD. In: Essentials of Medical Pharmacology, 7thedn. New Delhi: Jaypee Brothers Medical Publishers; 2013.
2. Satoskar RS, Nirmala N Rege, Bhandarkar SD, 23rdedn. Mumbai: Popular Prakashan; 2013.
3. Parasuraman S, Raveendran R, Kesavan R. Blood sample collection in small laboratory animals. 2010; 1(2): 87-93.
4. Medhi B. In: Practical Manual of Experimental and Clinical Pharmacology, 2ndedn. New Delhi: Jaypee Brothers Medical Publishers; 2017.
5. Mohan H. Textbook of pathology. Jaypee Brothers Medical Publishers; 2015.
6. Gupta SK. Drug screening methods. Jaypee Brothers; 2004.
7. Goodman LS. Goodman and Gilman's the pharmacological basis of therapeutics. New York: McGraw-Hill; 1996.
8. Richard F. Lippincott's Illustrated Reviews: Pharmacology 4th Edition
9. Waugh A, Grant A. Ross & Wilson Anatomy and physiology in health and illness E-book. Elsevier Health Sciences; 2014 Jun 25.
10. Katzung BG. Basic and clinical pharmacology. McGraw Hill; 2012.


8/11/21

YENEPOYA (DEEMED TO BE UNIVERSITY)

Name of the Candidate: Mr. Jaswanth Gowda B.H.

Application No: 495/ July 2020

Guide Name: Dr. Mohammed Gulzar Ahmed

Subject: Pharmaceutical Science

Pre PhD Syllabus

Paper II

(Total: 60 Hours)

Unit-I Preformulation concepts

10 Hrs

1. Drug excipient interactions and Methods to determine.
2. Kinetics of stability.
3. Stability testing.

Unit-II Optimization techniques in Pharmaceutical Formulation

8 Hrs

1. Concept and parameters of optimization.
2. Optimization techniques in pharmaceutical formulation and processing.
3. Statistical designs, Contour designs and Factorial designs.

Unit-III Transdermal delivery systems

14 Hrs

1. Introduction to structure of skin and barriers.
2. Mechanism of drug absorption through skin.
3. Types of transdermal formulations: 1st generation, 2nd generation and 3rd generation.
4. Microneedles: Types, Fabrication & evaluation techniques, Advantages & Disadvantages, Applications.
5. Types of penetration enhancement techniques.
6. Formulation and evaluation of various transdermal delivery systems.
7. Application of Novel drug delivery systems (NDDS) in transdermal drug delivery.

Unit-IV Novel drug delivery systems (NDDS)

10 Hrs

1. Introduction to NDDS: Concepts and models.
2. Concepts, events and biological process involved in drug targeting.
3. Types of Nanoparticles and Microparticles: Foemulation and Evaluation.

4. Concepts of Vesicular delivery systems: Liposomes, Niosomes, Phytosomes, Aquasomes, Electrosomes, Cubosomes and Transferosomes.

Unit-V Polymers and co-polymers

10 Hrs

1. Introduction to polymers and co-polymers.
2. Types of polymers: Natural, synthetic and semi-synthetic.
3. Biodegradable and Non-biodegradable polymers.
4. Application of polymers in drug delivery systems.

Unit-VI Biopharmaceutics and Pharmacokinetics

8 Hrs

1. Introduction, Biopharmaceutic factors affecting drug bioavailability.
2. *In vitro* drug release testing: Compendial methods of dissolution and alternative methods of dissolution testing.
3. *In vitro-In vivo* correlation, Kinetics in dissolution study.

REFERENCES

1. Y. W. Chien. Novel Drug Delivery Systems. 2nd edition. Revised and expanded. Marcel Dekker Inc. New York. 1992.
2. J. R. Robinson, V. H. L. Lee. Controlled Drug Delivery Systems. Marcel Dekker Inc. New York 1992.
3. Edith Mathiowitz. Encyclopedia of Controlled delivery. Wiley Inter-science Publication. John Wiley and Sons Inc. New York. Chichester Weinheim.
4. N. K. Jain. Controlled and Novel drug Delivery. CBS Publishers & Distributors. New Delhi. First edition 1997 (reprint in 2001).
5. S. P. Vyas, R. K. Khar. Controlled Drug Delivery-concepts and advances. Vallabh Prakashan. New Delhi. First edition 2002.

JOURNALS

1. Journal of controlled release. (Elsevier)
2. International Journal of Pharmaceutics. (Elsevier)
3. Journal of Drug Delivery Science and Technology. (Elsevier)
4. Journal of Pharmaceutical Sciences. (Elsevier)
5. Indian Journal of Pharmaceutical Sciences. (IPA)

Handwritten: H. S. Srinivas
Principal / Dean
Vengal Rao Pharmacy College & Research Centre
Kadavathur, Mangaluru-575013

Broad area of work: Evaluation of Thymoquinone and Hesperidin treatment against Ifosfamide and 5-fluorouracil induced toxicities.

Syllabus for Pre Ph.D Examination Paper II

Paper II – Theoretical foundations

Total hours: 65

Pharmacology

Unit 1 General Pharmacology: 15hrs

1. Introduction, definition, nature and sources of drugs, Drug nomenclature.
2. Principles of pharmacokinetics: i.e., Absorption, distribution, metabolism and excretion of drugs, Drug interactions and adverse drug reactions.
3. Principles of pharmacodynamics.
4. Histopathological studies.

Unit II: Cellular and Molecular basis of pharmacology 10hrs

1. Cell proliferation: Cell cycle, Cell cycle regulators (positive and negative regulators), Interactions between cells, growth factors and extracellular matrix.
2. Cell injury: Apoptosis and Necrosis.
3. Repair and regeneration of cells.

Unit III: Pharmacology of drugs acting on tumour 10hrs

1. General principles of chemotherapy
2. Alkylating agents
3. Antimetabolites
4. Natural and semi synthetic products
5. Miscellaneous
6. Hormones in cancer chemotherapy
7. Biological response modifiers.

Unit IV Phytochemical and Pharmacological drug Screening methodology 10hrs

1. General introduction, composition, chemistry & chemical classes, biosources, therapeutic uses and commercial application of thymoquinone and hesperidin.
2. Principles of cancer: classification, etiology and pathogenesis of cancer
3. Screening methods for
 - Anticancer drugs
 - Immunomodulatory activity
 - Antioxidant activity
 - Anti-inflammatory activity

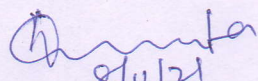
Unit V Introduction to Experimental Pharmacology:

15hrs

1. CPCSEA guidelines – animal handling and animal care
2. Methods of anaesthetizing animals and methods of euthanasia
3. Blood collecting methods and common route of drug administration in laboratory animals
4. Toxicity studies- acute and chronic toxicity, carcinogenicity, genotoxicity, safety pharmacology.
5. New drug discovery and development process
6. Spectrophotometry: Principles, instrumentation, advantages, disadvantages

References

1. Tripathi KD. In: Essentials of Medical Pharmacology, 7thedn. New Delhi: Jaypee Brothers Medical Publishers; 2013.
2. Satoskar RS, Nirmala N Rege, Bhandarkar SD, 23rdedn. Mumbai: Popular Prakashan; 2013.
3. Parasuraman S, Raveendran R, Kesavan R. Blood sample collection in small laboratory animals. 2010; 1(2): 87-93.
4. Medhi B. In: Practical Manual of Experimental and Clinical Pharmacology, 2ndedn. New Delhi: Jaypee Brothers Medical Publishers; 2017.
5. Mohan H. Textbook of pathology. Jaypee Brothers Medical Publishers; 2015.
6. Gupta SK. Drug screening methods. Jaypee Brothers; 2004.
7. Goodman LS. Goodman and Gilman's the pharmacological basis of therapeutics. New York: McGraw-Hill; 1996.
8. Richard F. Lippincott's Illustrated Reviews: Pharmacology 4th Edition
9. Waugh A, Grant A, Ross & Wilson Anatomy and physiology in health and illness E-book. Elsevier Health Sciences; 2014 Jun 25.
10. Katzung BG. Basic and clinical pharmacology. McGraw Hill; 2012.


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Paper II- Theoretical Foundation

Broad area of work: Evaluation of pharmacokinetic & pharmacodynamic interaction of Gallic acid and Ellagic acid with Verapamil

Total hours: 65

Unit 1 General Pharmacology: 15hrs

1. Introduction, definition, nature and sources of drugs, Drug nomenclature.
2. Principles of pharmacokinetics: i.e., Absorption, distribution, metabolism and excretion of drugs, Drug interactions and adverse drug reactions.
3. Principles of pharmacodynamics.

Unit II: Cellular and Molecular basis of pharmacology 10hrs

1. Cell proliferation: Cell cycle, Cell cycle regulators (positive and negative regulators), Interactions between cells, growth factors and extracellular matrix.
2. Cell injury: Apoptosis and Necrosis.
3. Repair and regeneration of cells.

Unit III Pathophysiology & Pharmacology of diseases: 15hrs

1. Anti-angina and Other Anti-ischemic Drugs.
2. Anti-hypertensive Drugs.
3. Anti-diabetic drugs.
4. Drug used for depression.
5. Anti-ulcer drugs.
6. Drug used in Rheumatoid arthritis.
7. Anti cancer drugs.

Unit IV Pharmacological drug Screening methodology 10hrs

1. Anti-cancer agents.
2. Antidiabetic agents.
3. Antihypertensive agents.
4. Antipsychotic agents.
5. Analgesic agents.

6. Anti-ulcer agents.
7. Anti-inflammatory agents.

Unit V Introduction to Experimental Pharmacology:

15hrs

1. CPCSEA guidelines – animal handling and animal care
2. Methods of anaesthetizing animals and methods of euthanasia
3. Blood collecting methods
4. Toxicity studies
5. New drug discovery and development process
6. Spectrophotometry: Principles, instrumentation, advantages, disadvantages
7. High performance liquid chromatography (HPLC)

References

1. Tripathi KD. In: Essentials of Medical Pharmacology, 7thedn. New Delhi: Jaypee Brothers Medical Publishers; 2013.
2. Satoskar RS, Nirmala N Rege, Bhandarkar SD, 23rdedn. Mumbai: Popular Prakashan; 2013.
3. Parasuraman S, Raveendran R, Kesavan R. Blood sample collection in small laboratory animals. 2010; 1(2): 87-93.
4. Medhi B. In: Practical Manual of Experimental and Clinical Pharmacology, 2ndedn. New Delhi: Jaypee Brothers Medical publishers; 2017.
5. Mohan H. Textbook of pathology. Jaypee Brothers Medical Publishers; 2015..
6. Gupta SK. Drug screening methods. Jaypee Brothers; 2004.
7. Goodman LS. Goodman and Gilman's the pharmacological basis of therapeutics. New York: McGraw-Hill; 1996.
8. Richard F. Lippincott's Illustrated Reviews: Pharmacology 4th Edition
9. Waugh A, Grant A. Ross & Wilson Anatomy and physiology in health and illness E-book. Elsevier Health Sciences; 2014 Jun 25.
10. Katzung BG. Basic and clinical pharmacology. Mc Graw Hill; 2012.

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