Syllabus

Course Work

For

Ph. D. (Pharmacy)

[As per The Saurashtra University Ordinance for Ph D Programme – 2022 and University Grants Commission (Minimum Standards and Procedure for Award of Ph D Degrees) Ordinance, 2022]

Department of Pharmaceutical Sciences,

Saurashtra University,

Rajkot

Keeping in the view above Ph.D. Ordinance of the Saurashtra University, the credit requirements, number of courses to be taught, duration of the coursework, syllabus and minimum standards for completion of the coursework, the Coursework in Pharmacy shall be as follow:

Duration and Credit for Coursework in Pharmacy

- Duration of Coursework shall be of one semester in Continue Class basis.
- It is effective from academic year 2023-2024
- The Coursework shall be of 12 credits total.

Course Code	Title	Credit	Hours	Marks
01	Essential of Research Methodology	04	60	50 (25 Assignment + 25 Exam)
02	Research and Publication Ethics	02	30	50 (25 Assignment + 25 Exam)
03	Self-Study course	04	60	50 (Based on the credit of course and select subject)
04	Laboratory Training, Library work, Literature Survey and preparation of assignments & presentation	02	30	50 Review Report

- The student will submit assignments in each of the above theory paper in the form of detailed essay on any one topic with necessary references.
- The student will have to give 15 min presentation on paper No. 2 (Research and Publication Ethics) in presence of assessment committee and also, will have to submit review report regarding laboratory training, library work and literature survey done during course work.
- A student is required to score minimum 55% of marks, i.e., minimum 110 marks out of total 200 marks for the successful completion of the coursework.
- Minimum of 75% attendance is required in the coursework.

Note: Semester end examination shall be of MCQ type

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PHD Course work Syllabus

(Essential of Research Methodology)

(Sixty hours)

1. Selecting a problem and preparing Research proposals, Problems in Research

2. Literature survey-Use of Library, books and journals-Example of databases and softwares in literature review, Medlines-Internet, Patent Search, and reprints of articles as a source for Literature survey. demonstration of the online data bases and its seminar e.g. pubmed, science direct, and scifinder etc. Practical session of library access and literature review. Introduce to 'Shodhganga'-as a online data base from UGC. Indian journals database: IndMed, Indian Science Abstracts, Exhisting impact factor system-Scimago, Thomson reuters etc..

3. Documentation-How to document? Techniques of documentation, Importance of documentation, Use of computer packages in documentation.

4. Research Report/Paper writing/ thesis writing: Special focus on different parts of the Research paper such as Title (Title of project with authors name etc), Abstract- Statement of the problem, Background list in brief and purpose and scope, Key words, Methodology-subject, apparatus, instrumentation & procedure, Resultstables, graphs, figures & Statistical presentation, Discussion-support or non support of hypothesis, practical & theoretical Implications, Conclusion, Acknowledgements, References, Errata, Importance of Spell check for entire project/paper, Uses of footnotes, Conflict of interest, Peer review, responsible authorship, ethics in publication.

5. Biostatistics in research: Methods of statistics: Normal distribution, Nullhypothesis, ANOVA, t-test, Chi square test, and other parametric and nonparametric tests, various statistical softwares in research

6. Preparation of a good presentation (especially for oral presentation): Importance, types different skills, contained, format of model, introduction, Poster, Gestures, eye contact, facial, expressions, stage, fright, volume- pitch, speed, pause & language, Visual aids & seating, Questionnaire

7. Research grants: Sources for getting research grants– international agencies, Government and private bodies, points to remember while applying for the grants.

8. Information and communication technologies (ICTs) in research: Use of internet groups, social networking sites, developing personal research website, various educational software's like oodles etc., the concept of virtual lab in the sharing and disseminating knowledge in the research and education.

9. Poster presentations for international conferences

10. Awareness on National body or scientific societies FICS, Royal society, London, AAPS, ASPET, etc.. in respective field.

References:

1. Research in Education- John V. Best, John V. Kahn 7th edition
2. Presentation skills - Michael Hallon- Indian Society for Institute education
2. Practical Introduction to copyright.- Gavin Mcfarlane
3. Thesis projects in Science & Engineering – Richard M. Davis.
4. Scientist in legal Systems- Ann labor science
5. Thesis & Assignment – Jonathan Anderson
6. Writing a technical paper- Donald Menzel
7. Effective Business Report Writing –Leland Brown
8. Protection of industrial Property rights- P. Das & Gokul Das
9. Spelling for the millions- Edna Furmess
10. Preparation for publication – King Edward Hospital Fund for London
11. Information Technology – The Hindu speaks
12. Documentation – Genesis & Development 3792.
13. Manual for evaluation of industrial projects-United Nations
14. Manual for the preparation of industrial feasibility studies

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PHD Course work Syllabus

Research and Publication Ethics

(Thirty hours)

01: PHILOSOPHY AND ETHICS

1. Introduction to Philosophy : definition, nature and Scope, Concept, Branches
2. Ethics: definition, moral philosophy, nature of moral judgements and reaction

02: SCIENTIFIC CONDUCT

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP)
4. Redundant publications: duplicate and overlapping publications, salami slicing
5. Selective reporting and misrepresentation of data.

03: PUBLICATION ETHICS

1. Publication ethics: definition, introduction and importance
2. Best practices /Standards setting initiatives and guidelines: COPE. WAME, etc.,
3. Conflicts of interest
4. Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types
5. Violation of publication ethics, authorship and contributorship
6. Identification of publication misconduct, complaints and appeals
7. Predatory publishers and journals

04: OPEN ACCESS PUBLISHING

1. Open access publications and initiatives
2. SHEERPA/RoMEO online resource to check publisher copyright & Self – archiving policies
3. Software tool to identify predatory publications developed by SPPU
4. Journal finder /Journal suggestion tools viz.JANE., Elsevier journal Finder, Springer Journal Suggester, etc.,

05: PUBLICATION MISCONDUCT

A. Group Discussions

1. Subject specific ethical issues, FFP, authorship

2. Conflicts of interest

3. 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

06: DATABASES AND RESEARCH METRICS

A. Databases

1. Indexing databases

2. Citation databases: Web of Science, Scopus, etc.

B. Research Metrics

1. Impact Factor of Journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score

2. Metrics: h-index, g index, i10 index, altmetrics

References:

1. Bird, A.(2006). Philosophy of Science.Routledge
2. Maclntyre, Alasdair (1967) A Short History of Ethics. London
3. P.Chaddah, (2018) Ethics in Competitive Research: Do not get Scooped; do not get Plagiarized, ISBN:978-9387480865
4. National Academy of Sciences, National Academy of Engineering and Institute of Medicine. (2009). On Being a Scientist: A Guide to responsible conduct in Research: Third Edition, National Academies Press.
5. Resnik, D.B.(2011) What is ethics in research & why is it important. National institute of Environmental Health Science, 1-10.
6. Beall, J: (2012) Predatory publishers are corrupting open access. Nature, 489(7415), 179-179. https://doi.org/10.1038/489179a
7. Indian National Science Academy (INSA), Ethics in Science Education, Research and Governance(2019), ISBN:978-81-939482-1-7.

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Self-Study course

Self study course credit has to be earned through MOOC Course. The MOOC Couse total 4 credit offered by any prestigious platform (Swayam, Etc.) will be selected by enrolled PhD Students in consultant with their PhD Guide.

Each PhD Student is required to earn a minimum 4 credit through MOOCs to complete self study course work component.