

Department of Pharmaceutical Sciences, Saurashtra University, Rajkot

PHD Course work Syllabus

(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'-an a online data base from UGC. Indian journals database: IndMed, Indian Science Abstracts, Existing 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, Results-tables, 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, Null-hypothesis, ANOVA, t-test, Chi square test, and other parametric and non-parametric 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 softwares like moodles 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.**

Assignments

- 1. Book review**
- 2. Name of 10 books of your subject, Name of 10 impact factor journals of your area, Name of 10 website of your subjects**
- 3. Grant proposal writing**
- 4. PPT preparation on grant proposal/your own teaching topic/phd proposal**

- 5. Statistical numerical and exercise**
- 6. Every student must find at least 5 people who are expert in their area and communication should be done for the problem selection**
- 7. preparation of your own website**
- 8. Create references in Endnote (Harvard and Vancouver both types)**

Recommended Books: -

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 o 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 Furrness
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