

UNIVERSITY OF SARGODHA
DEPARTMENT OF SOIL & ENVIRONMENTAL SCIENCES, COLLEGE OF AGRICULTURE

COURSE OUTLINE

Spring-2020

Course Title: Research Methods and Scientific Writing

Course Code: SES-405

Credit Hours: 3(2-1)

Instructor: Prof. Dr. Ghulam Sarwar

Email: ghulam.sarwar@uos.edu.pk

DESCRIPTION AND OBJECTIVES

The aim of this course is basically to develop understanding of the students about the write up of technical reports, synopsis and thesis and scientific projects. The precise learning of this course will enable the students to achieve these tasks successfully. This course will be helpful for students in execution of their masters and eventually doctorate research and final write up of their synopsis and dissertations. The objectives of this course are as follows:

1. This course will enable the students to conceive problem-oriented research, plan, execute and document research results.
2. Problem oriented research plan, execution and documentation of research results are discussed.
3. The students should be able to search literature, plan and execute research projects and publish research reports.

INTENDED LEARNING OUTCOMES

This course will enable the students to conceive problem-oriented research, plan, execute and document research results. The students should be able to search literature, plan and execute research projects and publish research reports. This course will be helpful for students in execution of their masters and eventually doctorate research and final write up of their synopsis and dissertations

COURSE CONTENTS

Theory

1. The purpose and kinds of research
2. General consideration and identification of the problem
3. Background reading and review of literature: Objectives, Sources, Collection and citation
4. Preparation of research project: Title, objectives, methodology, work plan and budget.
5. Scientific writing
- 5.1 Aims, components and organizing the material
- 5.2 Techniques of composition: Table of contents, list of tables and figures, standard abbreviation
- 5.3 Footnoting, documentation
- 5.4 Referencing: Alphabetical and chronological order
- 5.5 Appendices and bibliography
6. Editing and evaluating the final draft.

Practical

1. Exercise of writing research proposal
2. Assigning different title to the students
3. Exercise of collecting materials from different sources on assigned topics

READINGS

1. ASA. 1998. Publications Handbook and Style Manual. ASA, Madison, WI, USA.
2. Bates, D.J. 1994. Writing with Precision. Acropolish Books Ltd. Washington, DC, USA.
3. Blaxter, L., C. Hughes and M. Tight. 2006. How to Research. 3rd Ed. Open University Press McGraw Hill, Berkshire, UK.
4. Ghafoor, A. 2007. Manual for Synopsis and Thesis Preparation. Univ. Agri., Faisalabad, Pakistan (ISBN 969-8237-7-0). 109 p.
5. Ghafoor, A., G. Murtaza and S.I. Hussain. 2006. Fundamental of scientific communications and presentations. Allied Book Centre, Urdu Bazaar, Lahore. (ISBN 969-547-01-7). 190 p.
6. Harrad, S., L. Batty, M. Diamond and G. Arhonditsis. 2008. Students Projects in Environmental Science. John Wiley & Sons Ltd. West Sussex, England.
7. Katz, M.J. 2009. From Research to Manuscript – A Guide to Scientific Writing. 2nd Ed. Springer-Verlag, Frankfurt, Germany.
8. Kothari, C.R. 2004. Research Methodology (Methods and Techniques) 2nd Ed. New Age International Publishers, India.
9. Luellen, R.W. 2001. Fine-tuning your writing. Wise Owl Publishing Company, Madison, WI, USA.
10. Ghafoor, A., G. 2006. Manual for synopsis and thesis preparation. University of Agriculture, Faisalabad.

COURSE SCHEDULE

| Week | Topics and Readings | Books with Page No. |
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| 1. | Course Outlines: Introduction and importance of the course, Concepts of research proposal, synopsis, thesis and project, Definitions of Research from different point of views | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 1-20 |
| 2. | Concepts of research proposal, synopsis, thesis and project, The purposes of research for social sciences, The purposes of research for life sciences | Research Methodology Methods and Techniques, C. R. Kothari. 2004. New Age International (p) Limited, Publishers, India. Page 1-23 |
| 3. | Concepts of research proposal, synopsis, thesis and project, The kinds of research, Determination and diagnosis of scientific problem | Research Methodology Methods and Techniques, C. R. Kothari. 2004. New Age International (p) Limited, Publishers, India. Page 1-15 |
| 4. | General consideration of particular scientific problem, General identification of particular scientific problem | Research Methodology Methods and Techniques, C. R. Kothari. 2004. New Age International (p) Limited, Publishers, India. Page 23-30 |

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| 5. | Background reading of literature for identified problem | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 90-130 |
| 6. | Objectives and Sources of literature review, Collection and citation of literature review | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 90-130 |
| 7. | Preparation of research project: Title, objectives and methodology, Work plan and budget | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 132-151 |
| 8. | Preparation of research project: Budget, Comprehensive discussion for the formulation of research project | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 132-151 |
| 9. | Comprehensive discussion for the formulation of research project, Difference between academic and developmental research proposal | Research Methodology Methods and Techniques, C. R. Kothari. 2004. New Age International (p) Limited, Publishers, India. Page 1-23 |
| 10. | Scientific writing; Aims and components, how to organizing the material | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 226-252 |
| 11. | Techniques of composition: Table of contents, List of tables and figures | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 255-266 |
| 12. | Techniques of composition: List of standard abbreviation, Footnoting | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 255-276 |
| 13. | Documentation, Referencing: Alphabetical and chronological order | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 255-276 |
| 14. | Referencing: Alphabetical and chronological order, Visit of library for reference collection | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 255-276 |
| 15. | Visit of library for reference collection, Appendices and bibliography | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 255-276 |
| 16. | Editing the final draft, evaluating the final draft | How to Research. Blaxter, L., C. Hughes and M. Tight. 2006. 3 rd Ed. Open University Press McGraw Hill, Berkshire, UK. Page 255-276 |

RESEARCH PROJECT/PRACTICAL/LABS/ASSIGNMENTS

1. Exercise of writing research proposal
2. Assigning different title to the students
3. Exercise of collecting materials from different sources on assigned topics

Short research projects and laboratory assignments will be assigned to the students during the semester

ASSESSMENT CRITERIA

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| Sessional: | 20 % of the total theory marks (Project, Presentation, Participation and Assignment) |
| Project: | - |
| Presentation: | - |
| Participation: | - |
| Mid Exam: | 30 % of the total theory marks |
| Final Exam: | 50 % of the total theory marks |
| Practical Exam: | 100 % of the total practical marks |