

“Dissemination of Education for Knowledge, Science and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

Raje Ramrao Mahavidyalaya, Jath Dist. -Sangli

Post Graduate Department of Chemistry

A REPORT SUBMITTED

TO

Internal Quality Assurance Cell

CERTIFICATE COURSE

IN

RESEARCH METHODOLOGY

2019-20

“Dissemination of Education for Knowledge, Science and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur

Raje Ramrao Mahavidyalaya, Jath

(AFFILIATED TO SHIVAJI UNIVERSITY, KOLHAPUR)

Department of Chemistry

CERTIFICATE COURSE

IN

RESEARCH METHODOLOGY

To be implemented from

June 2019

“Dissemination of Education for Knowledge, Science and Culture”

- Shikshanmaharshi Dr. Bapuji Salunkhe

Shri Swami Vivekanand Shikshan Sanstha, Kolhapur's

Raje Ramrao Mahavidyalaya, Jath Dist. - Sangli
Post Graduate Department of Chemistry

Date -22/07/2019

To,
The Principal,
Raje Ramrao Mahavidyalaya, Jath
Tal: Jath Dist.: Sangli - 416404

Subject: - Regarding permission to commencement of certificate Course
in Research Methodology.

Respected sir,

With the reference to above subject, our department is going to conduct certificate course in **Research Methodology** for M. Sc. Students in this year academic year. So, I request you to give us permission to conduct above said course.

Thanking you,

Yours Faithfully


(Mr. K. K. Rangar)
HEAD

Department of Chemistry
Raje Ramrao Mahavidyalaya, Jath.

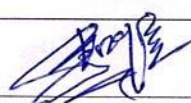

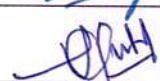
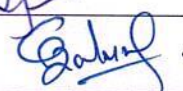
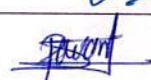
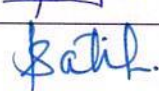
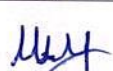
DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE IN RESEARCH METHODOLOGY

Academic year 2019-20


Date: - 22/07/2019

Notice of Meeting

The meeting of the members of BOS in Certificate Course in Research Methodology is conveyed on 25th July 2019 for the preparation of syllabus.

Name	Position	Signature
Mr. K. K. Rangar	Chairman	
Miss. M. R. Mujawar	Coordinator	
Dr. S. R. Kulal	Member	
Mr. G. D. Salunke	Member	
Mr. R. B. Sawant	Member	
Prof. (Dr.) S. S. Patil	Member	
Dr. G. D. Kore	Member	


Mr. K. K. Rangar
HEAD
Department of Chemistry
Raje Ramrao Mahavidyalaya, Jath.

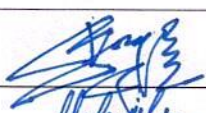


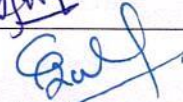
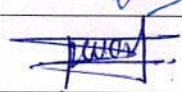
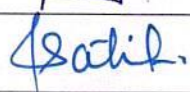
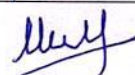

Dr. V. S. Dekhale
I/c. Principal
Raje Ramrao Mahavidyalaya, Jath
Tal-Jath, Dist-Sangli.

DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE IN RESEARCH METHODOLOGY

Academic year 2019-20

Minutes of Meeting

The meeting of the members of BOS in Certificate Course in Research Methodology is held on 25th July 2019 for the preparation of syllabus. The following members are present and prepare the syllabus of above course and submitted to IQAC, Raje Ramrao Mahavidyalaya, Jath.

Name	Position	Signature
Mr. K. K. Rangar	Chairman	
Ms. M. R. Mujawar	Coordinator	
Dr. S. R. Kulal	Member	
Mr. G. D. Salunke	Member	
Mr. R. B. Sawant	Member	
Prof. (Dr.) S. S. Patil	Member	
Dr. G. D. Kore	Member	




Mr. K. K. Rangar
HEAD
Department of Chemistry
Raje Ramrao Mahavidyalaya, Jath.

Aims:

The aim of this course is to impart research skills to the beginners and help to improve the quality of research by the existing researchers. It also encompasses the understanding and application of appropriate research design, statistics, and the use of the computer for data analyses, report writing and presentation. The course also introduces the key conceptual issues of each research method, as well as giving practical guidance. It covers the series of research methodology contents: from problem formulation, to design, to data collection, analysis, reporting and dissemination. The course has the dual aims of equipping students with conceptual understandings of current academic debates regarding different methods, and the practical skills to put those methods into practice.

Objectives: -

The main objectives of the course are to train the students to develop the following: -

1. To bring out in students the latent art of being inquisitive towards the world around and within them.
2. Guide students on some techniques to sharpen analytical skills, a necessity to become a successful researcher.
3. Types of research, project-oriented research, domain specific research approaches.
4. A gentle introduction to research methodologies and ethics in research.
5. Emphasize the importance of good writing skills in research, writing formats, and existing services that can enhance their writing skills.
6. Identification of good research papers and journals on a subject matter, based on standard indexes like impact factors, h-index, citation scores, and so on.
7. Exercise students to read seminal papers on few topics they are learning in their current syllabus, so as to create a greater interest in them towards their academic responsibilities.

8. Teach students to write a short survey-oriented research paper, along with basic validation methods for hypothesis, and benchmarking with gold standards.

Learning Outcomes:

1. Students will be more aware of the beauty and impact of research in daily life, and be encouraged to delve into research activities, whether on a small/large scale at present.
2. A clear understanding and a roadmap on research for the student's future reference. This will be helpful to them, as proposing new ideas, research projects, as well as writing research papers are now becoming a part of graduate degree level activities across several institutions in the country and worldwide.
3. An appreciation of the importance of sharpening analytical skills to enhance the student's ability to make reliable inferences, as well as skills for good writing, and speaking, will be instilled in the students. This will not only help the students in future, but also in the courses they are currently enrolled in, and improve their academic and overall performance, and boost their confidence.
4. Students will learn how to search for and identify good research papers, especially landmark papers in their field of study, research ethics, and basic validation approaches for new methods they may propose in the future.
5. Increased productivity of students, with an edge so that they are better equipped to face the challenges they may encounter in future on the career front.

Evaluation System:

All the students will be continuously evaluated by,

a. Attendance	10 M
b. Assignments	10 M
c. Theory examination (Two papers)	80 M
d. Seminars (Two papers)	50 M
e. Project	50 M
<hr/>	
	200 M

Nature of Theory question paper:-

- Q.1. Multiple choice question and compulsory, containing 08 questions. (08 marks)
- From Q.2-Q.6. (To be divided into sub-questions A, B, C &/or D) **any four** questions to be solved. (32 marks)

Seminars:

Two seminars for each paper to be conducted during the course. This is to be valued for 40 marks and 10 marks for viva voce.

Project:

Simple project work is to be given and dissertation to be submitted at the end of the course. This is to be valued for 40 marks and 10 marks for viva voce examination.

Grades: - **A grade**= above 75, **B grade** = above 60, **C grade** = above 50

Certification: - A certificate will be issued on successful completion of the course.

Paper- I: Research Methodology [Total periods: 15L]

Unit-1: Introduction to Research

(3L)

- A) Introduction, Types of Research, Importance of Research in Science,
- B) Steps in Research Process, Formulating a Research Problem, Review of Literature

Unit-2: Historical Research

(4L)

Meaning, Scope of historical research, Uses of history, Steps of doing historical research (Defining the research problem and types of historical inquiry, searching for historical sources, Summarizing and evaluating historical sources and presenting pertinent facts within an interpretive framework.) Types of historical sources, External and internal criticism of historical sources.

Unit-3: Research Design

(4L)

- A) Concept and Importance of Research Design
- B) Types and Uses of Research Design
- C) Need and Essentials of a Good research design

Unit-4: Research Methodology

(4L)

Introduction to research methodology, design and implementation of research methods, types of research, the research process, formulating, reviewing the literature.

Paper- II [Total periods: 15L]

Literature Searching and Writing Reports

Unit-1: Use of Computer Applications in Research (4L)

Understanding and Using the Library and the Internet for Research
Computer for Data Processing

Unit-2: Research Report Writing (4L)

Essentials of research report writing, Structure/ Layout, Types of
Research Report Presentation skills for research paper/report.

Unit-3: Literature Searching (4L)

On-line searching, Database, Scifinder, Scopus, CA on CD Locating
research article, Citation Index, Impact Factor

Unit-4: Writing scientific report (4L)

Writing project proposal to funding agency, Paper writing for
International Journals. Conference presentation, preparation of
effective slides and presentation.

REFERENCES:

1. Best, J. W. and Khan, J. Research in Education. (7th Ed.) New Delhi: Prentice-Hall India Ltd. 1997.
2. Borg, B. L. Qualitative Research Methods. Boston: Pearson. 2004.
3. Bogdan, R. C. and Biklen, S. K. Qualitative Research for Education: An Introduction to Theory and Methods. Boston, MA: Allyn and Bacon.1998.
4. Bryman, A. Quantity and Quality in Social Science Research. London: Routledge.1988.
5. Charles, C.M. and Merton, C. A. Introduction to Educational Research.

- Boston: Allyn and Bacon. 2002.
6. Cohen, L and Manion, L. *Research Methods in Education*. London: Routledge. 1994.
 7. Creswell, J.W. *Educational Research*. New Jersey: Upper Saddle River. 2002.
 8. Creswell, J.W. *Research Design*. London: Sage Publications. 1994.
 9. Denzin, N.K. and Lincoln, Y.S. (Eds) *Handbook of Qualitative Research*. London: Sage Publications. 1994.
 10. Diener, E. and Crandall, R. *Ethics in Social and Behavioral Research*. Chicago: University of Chicago Press. 1978.
 11. Gay, L.R. and Airasian, P. *Educational Research*. New Jersey: Upper Saddle River. 2003.
 12. Golombok, S. (1999). *Modern Psychometrics: The Science of Psychological Assessment*. London: Rutledge.
 13. Hambleton, R. K., & Swaminathan, H. (1985). *Item Responses Theory: Principles and Applications*. Boston: Kluwer.
 14. Husen, T. and Postlethwaite, T. N. (eds.) *The International Encyclopedia of Education*. New York: Elsevier Science Ltd. 1994.
 15. Keeves, J.P. (ed.) *Educational Research, Methodology and Measurement: An International Handbook*. Oxford: Pergamon. 1988.
 16. Kline, P. (2000). *A Psychometrics Primer*. London: Free Association Books.
 17. Kline, P. (2000). *New Psychometrics: Science, Psychology and Measurement*. London: Rutledge.
 18. McMillan, J.H. and Schumacher, S. *Research in Education*. New York: Longman. 2001.
 19. Van de Linden, W.J. & Hambleton, R.K. (1997). *Handbook of Modern Item Responses Theory*. New York: Springer.