



R. J. COLLEGE of Arts, Science & Commerce (AUTONOMOUS)

(Hindi Vidya Prachar Samiti's RAMNIRANJAN JHUNJHUNWALA COLLEGE of Arts, Science & Commerce)

Opposite Ghatkopar Railway Station, Ghatkopar (West), Mumbai - 400 086, Maharashtra, INDIA.

Website : www.rjcollege.edu.in Email : rjcollege@rjcollege.edu.in Tel. No.: +91 22 25151763 Fax No: +91 22 25150957

College is recognized under Section 2(f) & 12(B) of the UGC Act. 1956

Affiliated to UNIVERSITY OF MUMBAI II NAAC Re-Accredited 'A' Grade (CGPA: 3.50)

PhD Course work 2020-21 onwards

As per University of Mumbai Circular No. Exam/Thesis Univ/VCD947 of 2018, minimum standards and procedures for the award of M.Phil and Ph.D. Degrees is communicated

- PhD course work shall be of 12 credits
- The course work will be treated as prerequisite for PhD.
- A minimum of 6 credits, which will include 2 credits of Research ethics.
- Remaining 6 credits will be assigned by the Research centre based on the topic allotted to research student.
- All courses prescribed for PhD course work shall be dully approved by the respective Board of Studies.
- The department where student pursues research shall prescribe the courses.
- The course work may be completed at the research centre.
- Course work should be completed in the initial one of two semester.
- The grades in the course work, including research methodology courses shall be finalized after a combined assessment by the RAC and shall be submitted to the University
- Minimum scoring 55%

Course Code: RJSPHD01

Topic: Research Methodology

Credits: 6

Unit I : Concept of Research (1 Credits)

Research Definition and Types of Research Why, What and How, Types and approach, material collection – primary and secondary sources. Different resources – library, field and other

Unit II: Experimental Design (1 Credits)

- Method and standardization
- Reproducibility of results
- Computational tools for research
- Search engines
- Writing a Report
- Bibliography

Unit III: Statistical tools for data analysis (2 Credits)

- Mean, median and mode
- Standard deviation
- Coefficient of correlation
- t-test
- ANOVA and regression analysis
- RBD and Latin square



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RAMNIRANJAN JHUNJHUNWALA COLLEGE
OF ARTS, SCIENCE & COMMERCE (AUTONOMOUS)
Ghatkopar (W), Mumbai-400 086, Maharashtra, INDIA

2019 : Star College Status by DBT

2008 : Best College by University of Mumbai 2010 : IMC RBNQ Award 'Performance Excellence' for the year 2009

2011 : 'Best Teacher Award' by Government of Maharashtra 2013 : DST-FIST 2014 : DBT STAR College

2013 & 2014 : 'Jagar Jaanivancha Award' by Govt. of Maharashtra 2016 : ISO 14001:2015 2016 : ISO 9001:2015 2017 : ISO 27001:2013

2018 : Autonomous Status by University Grants Commission (No. F 22-1/2018(AC) - 28.05.2018) & by University of Mumbai (No.Aff./ICD/18-19/440 - 08.06.2018)



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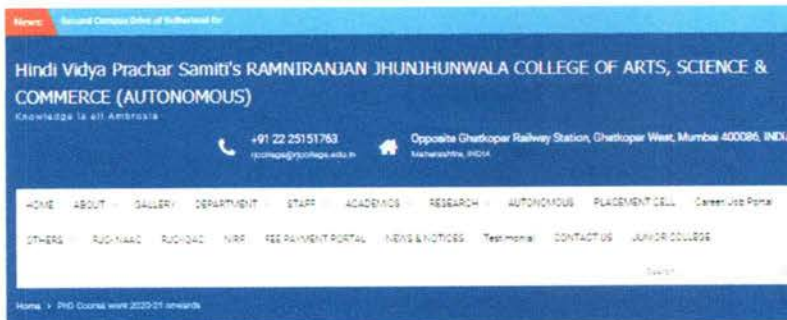
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Unit IV: Research Ethics and Good Practices and Art of Scientific Writing (2 Credits)

Ethics in Research, Data validation and authentication, Maintenance of Lab book for record keeping, Role of Research supervisor, Authorship, acknowledgement, reproducibility, copyright, plagiarism, plagiarism check, numbers, units, abbreviations and nomenclature used in scientific writing.



PhD Course work 2020-21 onwards

As per University of Mumbai Circular No. Exam/Thesis Univ/VCD/947 of 2018, minimum standards and procedures for the award of M.Phil and Ph.D. Degree is communicated

- The course work shall be of 12 credits
- The course work shall be spread over 4 semesters
- A minimum of 6 credits shall be in the 2nd and 3rd semesters
- A minimum of 6 credits shall be in the 4th semester
- An internal assessment for the course work shall be conducted by the Head of the Institution
- The performance in the course work shall be evaluated by the Head of the Institution
- The course work shall be completed by the 31st October of the 4th semester
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Course Code	Unit I: Concept of Research (1 Credits)
Subject	Research Definition and Types of Research, Objectives, Hypothesis and Assumptions, Methods and Techniques, Ethical Considerations, Sources of Information, Research Process - Theory, Practice and Ethics
Topic	Unit II: Experimental Design (1 Credits)
Research Methodology	Formulation of Hypothesis, Reproducibility of Results, Comparison of Results, Data Analysis, Sampling, Statistics
Credits	Unit III: Statistical tools for data analysis (2 Credits)
1	Mean, Standard Deviation, Correlation, Regression, Chi-Square Test, ANOVA, ANCOVA, Logistic Regression, ROC and ROC curves
	Unit IV: Research Ethics and Good Practices and Art of Scientific Writing (2 Credits)
	Ethics in Research, Data validation and authentication, Maintenance of Lab book for record keeping, Role of Research supervisor, Authorship, acknowledgement, reproducibility, copyright, plagiarism, plagiarism check, numbers, units, abbreviations and nomenclature used in scientific writing.

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