

**Ph.D. Course Work
Syllabus
(2024-2025)**



**Department of Computer Science
Central University of Odisha
Main Campus, Sunabeda
763004**

Ph.D. Course Work

Preamble

The Department of Computer Science is going to start its Ph.D. programme in the academic session 2024-2025. Keeping the importance of research in present scenario and to enhance the quality of research in the field of Computer Science, the syllabus for the Ph.D. Course has been designed.

As per the university ordinance and new guidelines, the research scholars who are provisionally registered under the Ph. D. Programme will have to undergo a Ph. D Coursework.

Admission to the Programme: As per Central University of Odisha ordinance

Number of Seats: As per the vacancy every year

Syllabus Structure

S.No.	Course Code	Subject	Periods			Credit	Remarks
			L	T	P		
1	PHD201	Research Methodology	6	0	-	6	
2	PHD202	Research Seminar	0	0	4	2	
3	PHD203	Elective/ Self Study/ MOOC	4	0	0	4	
4	PHD204	Elective/ Self Study/ MOOC	4	0	0	4	
Total			14	0	4	16	

Course Requirements

All Ph.D. students are required to register and successfully complete a minimum course credit as per the Ph.D. rules of the University, details of which will be made available to the students at the time of admission. Curriculum and syllabus will be decided by the Doctoral Research Committee (DRC).

RESEARCH METHODOLOGY

Objective:

The main objective of this course is to understand some basic concepts of research and its methodologies

- identify appropriate research topics
- select and define appropriate research problem and parameters
- prepare a project proposal (to undertake a project)
- organize and conduct research (advanced project) in a more appropriate manner
- write a research report and thesis • write a research proposal (grants).

UNIT-1

Introduction to Research Methodology: Definition and objectives of Research. Types of research, Various steps in Research process, Mathematical tools for analysis, Developing a research question-choice of a problem, Literature review, Surveying, Synthesizing, Critical analysis, Critical evaluation, interpretation, Research purposes, Ethics in research, Citation, Impact factor, h-index, i-10 index.

UNIT-2

Research report writing: Structure and component of research report, Types of reports, Lay-out of research reports, Mechanism of writing a research report, Thesis writing, scientific editing, Popular articles writing, Patent writing and filing.

UNIT-3

Data collection and sampling designing: Data collection, Primary data, Secondary data, Processing and analysis of data, Measurement of relationship, Statistical measurement and significance, Random sampling, Systematic sampling, Stratified sampling, Cluster sampling and multistage sampling.

UNIT-4

Quantitative methods for problem solving: Probability, Sampling distribution, Fundamentals of statistical analysis and inference, Estimation, Hypothesis testing and application, Correlation and regression analysis, Types of study designing, Experimental designing, Error analysis.

Outcome

Demonstrate knowledge of research processes (reading, evaluating, and developing). Identify, explain, compare, and prepare the key elements of a research proposal/report. Compare and contrast quantitative and qualitative research paradigms.

Reference Books

1. Donald R Cooper, Pamela S. Schindler, Business Research Methods, 8/e, Tata McGraw-Hill Co. Ltd., 2006.
2. Kothari C. K. (2004) 2/e, Research Methodology--Methods and Techniques (New Age International, New Delhi).
3. Krishnswamy, K.N., Shivkumar, Appa Iyer and Mathiranjana M. (2006) Management Research Methodology; Integration of Principles, Methods and Techniques (Pearson Education, New Delhi).
4. Bendar and Piersol, Random data: Analysis and Measurement Procedures, Willey Interscience, 2001.

