Study & Evaluation Scheme of

Doctor of Philosophy Course Work

[Applicable for 2019 onwards]

Version 2019

[As per CBCS guidelines given by UGC]

Approved in Academic council
25th Jan 2020

Quantum University, Roorkee
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Quantum University

Quantum University, Roorkee

Doctor of Philosophy Course Work

(As approved by Third Meeting of Academic Council held on 25th Jan 2020)

Evaluation Scheme

Question Paper Structure for Mid and End Semester (PD101, 102, 104, 105, 106)

The question paper shall be divided into three parts viz. Section A, Section B, and Section C, as given below:

Section A

shall consist of 8 very short answers type questions (not exceeding 50 words for each answer), out of which the candidate shall be required to answer any 5 questions, carrying 5 marks each.

Section B

shall consist of 8 short answer type questions (not exceeding 100 words for each answer), out of which the candidate shall be required to answer any 5 questions, carrying 10 marks each.

Section C

shall consist of 2 long answer type questions, out of which a candidate shall be required to answer any 1 question, carrying 25 marks.

Evaluation of Literature Review (PD171)

The research scholar shall submit a draft copy of the review of literature duly recommended by his supervisor(s) to the concerned school/department of the university. The student has to present review of literature two times in the semester (Mid and End Semester Evaluation) .

The End Semester Evaluation will be done by Supervisor (Internal Examiner) and the expert appointed by Vice Chancellor. The presentation shall be done infront of SRC for the final approval. SRC shall submit their assessment/recommendations to the RDC/COE as to whether the review of literature be accepted/accepted with minor suggestions; referred to the scholar for submission in revised form; or cannot be accepted in the present form and to be resubmitted.

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Rule for Coursework Evaluation

The rules for Coursework is mentioned in Ph.D. Rules and Regulation para 9 under coursework section. They are state below:

1. During course work, the scholar needs to attend all classes. A minimum 75% attendance is required to appear in End Semester Examination.

2. There will be One mid semester examination and one End semester examination. The weight age of mid semester examination will be 30% and End semester examination will be 70%. Passing marks in each course is 50%.

3. A Ph.D. scholar has to obtain a minimum of 55% overall of weighted marks in the course work in order to be eligible to continue in the programme and submit the dissertation/thesis.

4. Aggregated Marks in Coursework = Sum(Credit_ i x % of marks in course i) / Total Credits registered

5. In case a scholar is able to clear all courses but the aggregate marks are below 55% then scholar may be allowed to reappear in next cycle examination in any two course as improvement on the recommendation of URC .

6. If scholar is failed to obtain any above criteria then he may be allowed to appear in next cycle of examination on the recommendation of URC.

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Doctor of Philosophy: PC-09-7-1

Course Work

S NO.	COURSE CODE	SUBJECT	CREDITS	Hrs
1	PD101	**Research Methodology-I:** Problem Identifications, Formulations Hypothesis and Computer Applications	3	45 Hrs
2	PD10 2	**Research Methodology-II :** Quantitative Methods, Measurement, Statistical Analysis and Report Writing	3	45 Hrs
3	PD171	**Research Methodology-III** : Literature Survey	2	30 Hrs
4	PD104	**Research Methodology-IV:** Research and Publication Ethics	2	30 Hrs
5	PD105*	Management Philosophy and Practices	3	45 Hrs
6	PD106**	Advance Level Course; (Optional and on the recommendation of SRC)	3	45Hrs

Research Methodology I to IV are compulsory courses for every Ph.D. Coursework student.

A Coursework student has to complete minimum 10 credit and maximum 16 credit courses to complete requirement of pre Ph.D. coursework.

**PD 105 is compulsory for students registered under Ph.D (Management).*

***PD106 is domain specific course recommended by SRC. The course, PD 106 is optional.*

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(In compliance of Minimum Standards and Procedures for Award of M.Phil / Ph.D. Degree Regulations, 2016 and subsequent directives)
Effective from 1st July, 2019

SYLLABUS FOR COURSEWORK

Ph.D. PROGRAMME

Research Methodology

Course Code: PD101

Objective: To familiarize the research scholar with the fundamentals of scientific research Course Contents:

1. Scientific Research: meaning and characteristics of scientific research, validity in research, phases/stages in research; types of research- qualitative, quantitative, exponential, exploratory, empirical, descriptive, ex-post facto, case studies, historical studies, philosophical studies, quasiexperimental; ethical problems in research; constructs and variables- nature of construct and variables, concept of constructs, type of variables, continuous and categorical, constructs, observables and intervening variables; Review of literature- purpose of the review, sources of the review, preparation of index card for reviewing and abstracting

2. Problem Identification and Hypothesis Formation: problem- meaning and characteristics of a problem, types of problem, generality and specific of problem; hypothesis- meaning and characteristics of a good hypothesis, types of hypotheses, formulating a hypothesis, ways of stating a hypothesis; testing experimental hypothesis- standard error, test of significance, level of significance, degrees of freedom, errors in hypothesis-type I, type II errors

3. Sampling and Research Design: meaning and types of sampling; probability and non probability sampling. methods of drawing samples, requisites of a good sampling method, sample size, sampling error; meaning and purpose of research design, types of research design, criteria of a good research design, basic principles of experimental design

4. Introduction to MS-Office: MS-WORD, MS-EXCEL, MATLAB, LATEX.

Suggested Readings:

1. Cooper & Schindler, Business Research Methods, Tata McGraw Hill.
2. Saunders, Research Methods for Business Students, Pearson Education.
3. Allen T Harrell, New Methods in Social Science Researchs, Praeger Publishers, New York
4. Beri, G.C., Statistics for Management, Tata MacGraw-Hill
5. Chandan J. S., Statistics for Business and Economics, Vikas Publications.
6. Broota, K.D., Experimantal Designs in Behavioural Research, New Age International
7. Singh A. K., Test Measurement and Research Methods in Behaviours Sciences, Bharti Bhawan
8. Joyce Cox & Polly Urban, Microsoft Office, Galgotia Publishing
9. Sinha P.K., Computer Fundamentals, BPB Publishing.

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Research Methodology – II

Course Code: PD102

Objective: To gain familiarity about various data collection tools and techniques, data analysis and interpretation along with the application of computer and statistical software in research.

Course Contents:

1. Measurement and Scaling Techniques: Measurement in research, measurement scales sources of errors in measurement, tests of second measurement, techniques of developing measurement tools, meaning of scaling, scale classification bases, important scaling techniques, and scale construction techniques.

2. Data Collection, Processing and Analysis: Methods of data collection – primary data, secondary data; primary data collection – observation method, interview method, questionnaires, schedules, guideline for constructing questionnaires/schedules, secondary data collection of, selection of appropriate method of data collection; coding, editing and tabulation of data, charts and diagrams used in data analysis, bar and pie diagrams and their significance; measures of central tendency, measures of dispersion.

Correlation and regression analysis - meaning and uses, methods of calculation of coefficients and their analysis and implication sampling distribution, sampling schemes and sample sizes, confidence interval for the mean, t- statistic, z-statistic, confidence interval for the population variances, hypothesis testing, test of hypothesis for the population mean, population variance and ratio of two population variances; applications of z-test, t-test, f-test and chi-square test, association of attributes and techniques of testing, ANOVA 3. Report Writing: Meaning and significance of report writing, types of report, steps in writing report, layout of the research report, precaution in writing research report, developing thesis report, formatting, inside citations, references and bibliography, knowledge of computer, statistical software and their application, application of statistical tests/techniques through the use of statistical software like SPSS, scientific packages like LISREL, AMOS, and SYSTAT for documentation and report generation.

Suggested Readings:

1. Cooper & Schindler, Business Research Methods, Tata McGraw Hill.
2. Malhotra Naresh K. , Marketing Research, Pearson Education
3. Power Analysis for experimental Research: A practical Guide for the Biological, Medical and Social Sciences by R. Barker Baushell, Yu-Fang Li Cambridge University Press
4. Chandan J. S., Statistics for Business and Economics, Vikas Publications.
5. Broota, K.D., Experimental Designs in Behavioural Research, New Age International
6. Singh A. K., Test Measurement and Research Methods in Behaviours Sciences, Bharti Bhawan
7. Joyce Cox & Polly Urban, Microsoft Office, Galgotia Publishing
8. Sinha P.K., Computer Fundamentals, BPB Publishing.
9. Latex: A Document Preparation System, 2/E pearson low price edition by Lamport
10. MATLAB: An Introduction with Applications by Gilat Wiley India Pvt Ltd
11. Getting started with MATLAB by Rudra Pratap Oxford University Press

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Research Methodology III

Literature Survey

Course Code: PD171

Objective: The main objective of this course is to undertake a thorough review of available literature on the topic selected by the research scholar

Course Contents:

The research scholar will review the important studies conducted at the national and international level either by individuals or organizations including government agencies and present the methodology adopted and important findings emerged from these studies. Based on this review of literature the researcher will identify the research gaps existing in the available literature and thus justifying the need for the present study.

The researcher is supposed to follow the pattern adopted in the standard national and international research journals. However, as an illustration the pattern for reporting review of literature is as under:

Illustrated Examples

Tiwari and Sinha (1971) gave productivity trends and factor compensation in Indian textiles industry for the period 1946-65 comprising of two sub-periods (1946- 1955 and 1956-1965). The marginal productivity of capital on an average for the industry as a whole is found to be lower in the sub- period (1946-55) and higher during (1956- 65). On the contrary, the estimates of the marginal productivity of labour again on average exhibit an actual decline from 2.9 percent to 2.5 percent.

Menon (1971) in his review article examines the concepts associated with measurement of productivity at various dimensions of output and input, which are the major elements involved in the exercise of measuring productivity.

Kumar, Anil and Khurana (2007) in their paper have examined trends in productivity of labour and capital in dairy industry in India during pre and post-reform periods. The results in the study conclude that labour productivity at national level has shown considerable improvement during post-reform period. But variations have been observed in case of growth rate of labour productivity at state-level. On the other hand, capital productivity has declined during post-reform period at national and state levels.

Kumar and Bala (2007) in their study on "An evaluation of the impact of economic reforms on the growth and productivity of Indian small scale sector" has concluded that economic reforms process initiated in the early nineties has had a downbeat impact on the growth and productivity of small scale sector.

Research Methodology-IV

Research and Publication Ethics

Course Code: PD 104

Introduction to Research, Ethics and Academic Honesty, Ethics in Writing, Academic Integrity: Research, Misconduct/Fabrication /Unethical Practices, Academic/Research: Falsification, Manipulation or Tempering of Data, Literature Review and Proper Use of EResources, Using Design thinking Methods to Avoid Plagiarism, Writing Quality Academic Publications: Challenges to avoid plagiarism, Scientific Reading, Cite and Write, Style Manuals and Bibliographies. Ex. APA, MLA, Chicago, IEEE,

Introduction to Reference Management Tools (RMT), Features and Functionalities of Anti-Plagiarism Software, Detection of Plagiarism by using Different Online Tools, Agencies and Organisation dealing with plagiarism issues (eg. Retract/Deluze), Plagiarism Policies, Penalties and Consequences.

Introduction of Publication Ethics and its violations, Concept of Authorship, Concepts of Competing interests, Simultaneous submission, Types of Research fraud, Concept of Salami slicing, Concepts of conflict of interests

Suggested Reading:

1. Elsevier | Ethics in Research & Publication

Management Philosophy And Practices

Course Code: PD105

Objective: To acclimatize the research scholar about the philosophy and fundamental principals of management.

Introduction: meaning and nature of management, evolution of management thoughts, contribution of experts and eminent management thinkers like - Kautilya, Robert Owen, Charles Babbage, F.W. Taylor, Henry Fayol, Urwick, Max Weber, Mary Parker Follett, George Elton Mayo and Chester Irving Barnard, Principles of management enshrined in Bhagwad Gita.

Management Functions: basic understanding of nature, scope, significance, objectives, processes and theories of major management functions such as planning, organizing, leading and controlling.

Modern Management Approaches: Maslow, Herzberg, Blake & Mouton and Hersey Blanchard approaches, decision making with special reference to Herbert Simon, management by objectives (MBO), management science approach, systems approach, contingency approach, quality and excellence movements, corporate social responsibility, ethics at work.

Suggested Readings:

1. Stoner, Freeman, Gilbert Jr., Management, Pearson Education, New Delhi
2. Wren, Daniel A, Evolution of Management, McGraw Hill Publication, New York
3. Singh, R N, Management Thought and Thinkers, Sultan Chand & Sons, New Delhi

*Latest editions of all the suggested books are recommended.

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