MAHARASHTRA STATE BOARD OF VOCATIONAL EDUCATION EXAMINATION, MUMBAI

1	Name of Syllabus	**C.C.IN RESEARCH METHODS AND APPLIED STATISTICS (411170)**
2	Max.Nos of Student	25 Students
3	Duration	6 Month
4	Type	Part Time
5	Nos Of Days / Week	6 Days
6	Nos Of Hours /Days	4 Hrs
7	Space Required	Workshop = 400 Sq feet Class Room = 200 Sq feet TOTAL = 600 Sq feet
8	Entry Qualification	Graduate
9	Objective Of Syllabus/ introduction	To provide systematic training in research methods and its reports and importance.
10	Employment Opportunity	Job opportunities in research institute, can conduct research work independently etc.
11	Teacher's Qualification	Diploma / Certificate holder in concern field.
12	Training System	Training System Per Week Theory: 6 Hours; Practical: 18 Hours; Total: 24 Hours
13	Exam. System	

Sr. No.	Paper Code	Name of Subject	TH/PR	Hours	Max. Marks	Min. Marks
1	**41117011**	RESEARCH METHODS	TH-I	3 hrs	100	35
2	**41117012**	APPLIED STATISTICS AND ANALYSIS	TH-II	3 hrs	100	35
3	**41117021**	RESEARCH METHODS	PR-I	3 hrs	100	50
4	**41117022**	APPLIED STATISTICS AND ANALYSIS	PR-II	3 hrs	100	50
		Total			**400**	**170**

RESEARCH METHODS

THEORY – I AND PRACTICAL - I

1. INTRODUCTION
1.1 Meaning, Nature and scope of Research. Importance of Research in General and with special reference to Physical Education and Sports.
1.2 Characteristics of Research and Research Worker.
1.3 Basic Applied and Action Research, their relationship and differences.
1.4 characteristics, importance and methodology of Action Research.

2. The PROBLEM
2.1 Selection of Problem.
2.2 Developing Problem statement.
2.3 Meaning and significance of hypothesis.
2.4 Types of hypothesis.

3. NON-LABORATORY RESEARCH TECHNIQUES
3.1 Historical Research.
3.1.1 Meaning and significance
3.1.2 Examining Validity of Historical Data.
3.1.3 Principles of Historical Criticism.
3.1.4 Pitfalls in Historical Research.
3.2 Philosophical Studies.
3.2.1 Meaning and significance.
3.2.2 Methodology of Philosophical Research.
3.2.3 Critical Thinking Continuum.
3.3 Descriptive Studies-Board Survey
3.3.1 Questionnaire, Opinionnaire and Interview.
3.3.2 Case Studies and Profiles.

4. LABORATORY RESEARCH
4.1 Experimental Methods (Designs and applicable statistical procedure)
4.2 Control of Experimental Factors.
4.3 Principles of Experimental Enquiry (Mill's Canons).
4.4 Establishing a Research Laboratory.

5. RESEARCH REPORT
5.1 Difference between Abstract Research Proposal and Research Report.
5.2 Format of Research Report.
5.3 Tables and Figures.

APPLIED STATISTICS AND ANALYSIS

THEORY – II AND PRACTICAL - II

1. Analysis of Variance
1.1 Need for Analysis of Variance
1.2 Standard deviation or combined samples.
1.3 One-way Analysis of Variance
1.4 Post-Hoc test of significance

2. Analysis of Covariance
2.1 Need for Analysis of Covariance
2.2 Application of Analysis of Covariance.

3. Partial and Multiple correlations
3.1 Meaning and limitations of Partial correlation methods
3.2 Different order of Partial correlation and its computation.
3.3 Partial Standard Deviation.
3.4 Meaning of Multiple correlation.
3.5 Computation of various order of Multiple correlation.
3.6 Law of diminishing return and characteristics of multiple correlation.
3.7 Application of partial and multiple correlation in research.

4. Prediction and Wherry Doolittle Method
4.1 Meaning of prediction.
4.2 Two variable regression equation
4.3 Multiple regression equations
4.4 Wherry Doolittle Method of Multiple correlations.

5. Special correlation and Non-Parametric Methods.
5.1 Chi-square
5.2 Rank difference method of correlation
5.3 Bi serial correlation
5.4 Tetrachoric correlation
5.5 Phi-coefficient
5.6 Contingency coefficient
5.7 Curvilinear Relationships

6. Introduction to computers and its application in Research.

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