

Savitribai Phule Pune University

(Formerly University of Pune)

Syllabus for M.Phil./Ph.D. (PET) Entrance Exam : Defence & Strategic Studies

Research Methodology

Unit 1: Foundations of Research

Meaning of Research, motivation for research, objectives of research, Characteristics of scientific method, empiricism, value neutrality, Repeatability verifiability, Approaches to research: positivistic and interpretive, qualitative and quantitative, inductive and deductive and mix-method approach, Social Research – time and space context, Epistemology (Indian and western perspectives) ontological positions.

Unit 2: Basic terms and types of research

Concept, construct, Variables and types of variables, Logic, Induction, deduction and abduction

Methodology, method, tool and technique and data ,Types of research- Exploratory, descriptive, analytical/explanatory, experimental, evaluation and impact assessment, interdisciplinary, multidisciplinary, trans-disciplinary, Basic Research, Applied Research, Action research, participatory research and Policy research

Unit 3: Research Design

Research questions- Aim, Objectives, operational definitions and hypothesis, Definition, characteristic of good hypothesis and sources of hypothesis Types of hypothesis, Hypothesis Testing–Logic & Importance hypothesis testing-Research design- concept and definition, need, advantages of planning a research, characteristics of good research design, Steps in research design; Identification, Selection and Formulation of problem, Literature Review, Primary and secondary data, sources of data- authenticity, credibility, reliability of sources and data

Unit 4: Sample and sampling designs

Concept of population, sample, sampling frame, sampling unit, Need and advantages of sample study, Characteristics of representative sample, sampling error, Concept of probability and non-probability sampling, Types of probability sampling- simple random sampling, systematic random sampling, proportionate and disproportionate stratified random sampling Types of non-probability sampling- purposive & snowball.

Unit 5: Methods of research

Quantitative methodology, Qualitative methodology, triangulation, Ethnography, Case-study, historical analysis, Survey, Content Analysis, Tools of data collection: Interview Schedule, Observation and types of observation, Focused Group Discussion, Scales and scaling techniques, Interview Guide, Field Diary, Semiotic analysis, Rhetorical analysis, discourse analysis, critical discourse analysis

Unit 6: Statistics in Social Sciences

Types of measurement: Nominal, Ordinal, Interval and Ratio
Basic statistical techniques: aggregation of data, totals, percentages, tabulation – univariate, cross tabulation- bivariate and multivariate
Data Presentation- Charts and Graphs: Bar charts, Histograms, Clustered bar charts, clustered histogram, pie chart, Pyramid
Measures of Central Tendency: Averages – Arithmetic mean, Geometric mean, harmonic mean, Median, Mode
Measures of Dispersion: Range, Standard Deviation, Variance, Coefficient of Variation
Association, Correlation and Regression, Correlation coefficients Pearson's r and Spearman's rho, Linear regression, Statistical tests: underlying assumptions for statistical tests, t-test, chi-square test, F-test, Analysis of Variance, Non-parametric tests
Statistical packages: SPSS, Qualitative Data Analysis, N-Vivo and other softwares

Unit 7: Research Ethics and Publication of Research

Research Ethics, Historical overview of research ethics.
Introduction to ethical principles - Morality, Ethics?, What is ethical theory?, Anonymity, Confidentiality, Informed consent, Rights of participants, Harm to respondents and Researchers, Principles of biomedical and social science ethics, Ethical Guideline in Social Research. Sources of Scholarly discourse, books, journals, monographs, proceedings, encyclopaedias etc.
Databases online and print, Indexing databases, bibliographic databases, Publishing Research, Ranking of journals, citation indices, avoiding predatory journals, Impact factor and h-index, Plagiarism, its meaning and how to avoid it, Self-plagiarism, Anti-plagiarism measures – guidelines and software.

Unit 8: Referencing and Citations

Research referencing: Why – due credit to researchers, track back original research, its data, and sources etc., to avoid plagiarism, Referencing and Citations: What is Citation? Citation styles- APA and MLA, its basic components (Authors or editors, Book, journals etc., year and month of publication, page numbers, volume and issue etc.)
Differences in Citations of: Journal Articles, Authored books, Edited books, conference proceedings, posters, other media such as newspapers and magazines, electronic media such as websites and blogs, social media, photographs, videos and audio recordings, Legal proceedings, Reports of various agencies etc.

Citation and References management: traditional methods – 3 X 5 cards for references and notes, Computer based - reference management softwares: Paid – Endnote, Free – Mendeley, Zotero and others

Subject Concerned Syllabus Defence & Strategic Studies

1. Strategic Studies

- a. Strategic Studies: Assumptions and Approaches
- b. Theories and Causes of War – Nature of Contemporary Warfare
- c. Deterrence: Concept, Nuclear Deterrence and Current Relevance.
- d. Nuclear Strategy: Early Debates on the relevance of Nuclear Weapons. - US Nuclear Strategy - Soviet Nuclear Strategy - Russian Nuclear Strategy/Policy making - Chinese Nuclear Strategy - Indian Nuclear Strategy - Pakistan's Nuclear Strategy
- e. Strategic Studies in the post cold war era.

2. Geo-Politics and Military Geography

- a. Scope and Importance of geopolitics
- b. Evolution of Geopolitical Thought since the 19th Century - Geopolitics during the Cold War Period - Geopolitics in the post cold war era.
- c. Role of Geography in Military applications
- d. Man and Environment : (a) determinism, (b) Positivism
- e. Important and Scope of Logistics
- f. Planning Process and Principles of Strategic Geography
- g. Role of Geography in Land Warfare, Sea Warfare, Air Warfare and Space Warfare
- h. Weather conditions of Sea as factors in amphibious and airborne operations
- i. Military Geography of India and Defence Problems

3. International Relations

- a. Theories and Approaches
- b. Cold war –Détente – New Cold War -1989 changes in East Europe, Soviet disintegration.
- c. Developments in the Third World: Regionalism, and Nonalignment
- d. Evolution of International Economic Issues: Breton Woods System; NIEO; North-South; GATT and WTO.
- e. New World Order and Globalisation.

4. National Security

- a. Key Concepts of Security: (a) Balance of Power, (b) Collective Security, (c) Neutrality, (d) Nonalignment, (e) Equal Security, (f) Common Security.
- b. Approaches to Peace: (a) Diplomacy, (b) International Law, (c) United Nations, (d) Arms Control and Disarmament. (e) Track II diplomacy
- c. Problems of India's Security: - Global, Regional and Local environment and its impact on Security thinking.
- d. Problems of India's Internal Security and the Role of the State (Political, economic, socio-cultural and other dimensions, Terrorism, insurgency, etc.)

- e. Defence Organization of India
- a. Higher Defence Organisation in India
- b. Ministry of Defence
- c. Paramilitary Forces
- d. Intelligence Agencies
- e. Kargil Review Committee Recommendations
- f. India and Neighbours
- g. India and the United States (post 1990-91)
- h. India and Russia (post 1990-91)
- i. India and the Asia Pacific (post 1990-91)
- j. India and Europe (post 1990-91).
- k. India and West Asia (post 1990-91)
- l. SAARC

5. Indian Military History

- a. Military History of Ancient India
- b. Military History of the Medieval India
- c. The Military History of the Marathas
- d. The other regional military traditions of the Medieval period in India
- e. The British Period: The Making of the British Military forces - The Command Structure of the British (Company's) Army - The British Military Operations in the 19th century:
- f. British Indian Army
- g. Indian National Army.

6. Peace and Conflict Studies

- a. Conceptual analysis of Conflict and Peace
- b. Conflict Management and Conflict Resolution
- c. UN System : Pacific Settlement of Disputes - Peace Keeping, Peace making and Adjudication
- d. Disarmament and Arms Control
- e. Confidence Building Measures
- f. Functional Approaches and Regionalism
- g. Gandhian Approach and its relevance today
- h. Comprehensive Security and Human Security
- i. Peace Research and Peace Movements

7. Defence Economics

- a. Economic Theories of Defence
- b. Determinants of Defence/Security Expenditure
- c. Framework for analysis of India's Security Expenditures
- d. India's Defence Budget
- e. Defence and Development
- f. Rationale of Arms production
- g. Defence production in India
- h. Economic Instruments of Policy
- i. An analysis of India's security expenditures since 1947.

8. Science, Technology and National Security

- a. Introduction to Military Technology - its relevance to National Security.
- b. Introduction to emerging technologies.
 - (a) Energy
 - (b) Electronics, Computers, nanotech and Artificial Intelligence.
 - (c) Material Science.
 - (d) Biotechnology.
 - (e) Communications and Information Technology.
 - (f) Transportation and vehicle technology.
- c. Application of technologies to:-
 - (a) Armament and Weapon systems.
 - (b) Missile Technology.
 - (c) Communications and Radar technology.
 - (d) Electronic Warfare and Information Warfare.
 - (e) RNBC Warfare and Nuclear Energy.
 - (f) Aircraft and Ships.
 - (g) Satellite and Space technology.
 - (h) Intelligence.
 - (j) Logistics (transport, supplies, inventory, medical, repair, clothing and equipment).
 - (k) Border Management.
- d. Impact of developing technologies on Military Doctrine and conduct of warfare.
- e. Application of new technologies for Internal Security, Disaster Management, Training and Administration.
- f. Non military use of modern technologies and their impact on National Security (Power and energy, Trade, Economy, Banking, Media etc).