

Advanced Quantitative Research Methods

This course surveys foundations of social scientific research methods and design. It has been designed for first year M.Phil students, with the aim that this course along with the required qualitative research methods course will provide the students with a in sound foundation social science research methods. Topics include the scientific method; research ethics; research design; measurement; sampling; quantitative, qualitative, and mixed data collection techniques; data analysis and interpretation; and research proposal development. Students will learn how to define a research question, explore the strengths and limitations of various research methods, and gain perspective into several methods and research writing. It is expected that, upon successful completion of this course, students will study in greater depth those particular research methods that are most appropriate for their research.

Learning Objectives

By the completion of this course, students should be able to:

- Define a research question, clearly and succinctly;
- Determine appropriate levels and units of analysis for that research question;
- Operationalize a research question, specifying dependent and independent variables;
- Select appropriate method(s) for studying various types of research questions;
- Locate, identify, and review relevant scholarship for research on a selected question;
- Draft a preliminary research proposal; and
- Demonstrate familiarity with campus policies for protection of human subjects, including Institutional Review Board (IRB) procedures.

Course Requirements and Grading

Reflection Papers: Students are required to write a reflection paper of no more than 500 words on each of the assigned readings. In this paper, students will critically reflect on the day's readings. Reflection papers must be **submitted during the class time**. Cumulative percentage of all reflection papers will be 20% of the final grade.

Research Paper:**Students are required to write a 15-20 page research paper.** Topic of the paper should fall within the framework of the concepts covered in the class. At the minimum, **paper should include at least six articles from academic journals (or two books and two academic articles)**. This is a minimum requirement and by no means should be taken as a limit. Those students who wish to get a better grade would consider more in-depth study of their topics. Students may also cite materials covered in the class or sources like newspaper articles and other non-academic journals to boost their arguments in the paper. This paper will count for 15% of the student's final grade. Students are encouraged to start working on the paper at their earliest, and consult teacher of the course along the way to make sure that they are on

the right track. **Research papers should be submitted three weeks before the final term exams.**

Presentation (Research Paper): Students are required to present their research papers during allotted times. Presentation time is 15 minutes, followed by a question-answer session. Students will be graded based on content, organization, and manner of presentation, as well as their participation in question-answer sessions, both as presenters and audience. This assignment will be worth 5% of the final grade.

Book Report: Students are required to write a critical book report on a classical text and discuss it in the classroom (**Books for report must be approved by the instructor**). Specific instructions for this assignment will be distributed during the fifth week of the classes. On average, length of this report should be anywhere between 9-12 pages. Total worth of this book report is 10 %.

Book report should be submitted one week before the midterm exams

Exams: There will be two exams in this class, a midterm and a final. These exams will be closed book and conducted in the class room. Exams will be based on assigned readings, class discussions, lectures and any other learning activities done in the class room by the exam date. Midterm exam will be worth 20% and final exam will be worth 25% of the final grade.

Attendance & Class Participation: Students are required to come to class regularly. Attendance will be taken in each class. University policy on attendance will be followed. Class participation is also a vital part of this class. Students are required to read the assigned material prior to the class meetings and come prepared to take part in the discussion and learning activities related to that material. Participation includes, but not limited, reading the assigned material for the class, asking questions about the day's readings, answering questions raised by the instructor, spontaneously responding to the on-going discussion in the class, and taking part in the in-class activities. Overall, combined grade for attendance and participation is 5% of the student's final grade.

Grade Evaluation Criteria

Following is the criteria for the distribution of marks to evaluate final grade in a semester.

Marks Evaluation	Marks in percentage
Reflection Papers	20%
Research Paper	15%
Presentation (Research Paper)	5%
Book Report	10%
Midterm Exam	20%
Final Term	25%
Attendance & Class Participation	5%

Total 100%

COURSE POLICIES

A Note on Academic Honesty: It must be emphasized that university policies on academic dishonesty will be strictly followed. These policies prohibit acts of cheating, lying and deceit in their diverse forms. Since this class includes research component, students must also be fully aware of plagiarism. Plagiarism involves presenting someone else's ideas or written work as your own, without giving proper citation and credit to the original source. If you still have any question or confusion about academic dishonesty, please do not hesitate to discuss with the teacher.

Make-up Exams and Late Assignments: There will be no make-up exams, unless there is a valid (documented) reason for not taking the scheduled exams, or prior arrangements have been made with the instructor. As of late assignments, ten per cent of the grade will be deducted for each day an assignment is late. Students will also lose percentage of assignment grades if incomplete assignments are turned in.

Research Proposal

Scope.

May take the form of a preliminary proposal for master's thesis research (for MS students), a draft dissertation research or funding proposal (for PhD students), or a proposal for a research-based internship (for MS, MPS, or PhD students).

Contents.

All of the following should be included: title, abstract, statement of problem/ research question, justification, review of the literature, formal statement of research question, dependent and independent variables, hypotheses, proposed research design and methods, measures for protection of human subjects, proposed research schedule, resource requirements, budget, possible funding sources, preliminary bibliography.

Deliverables.

Week 3: Research question and abstract
Week 4: Preliminary bibliography
Week 5: Research question elaboration
Week 6: Research proposal outline
Week 9: Literature Review
Week 10: Methodology

- Week 11:** Submission of First Draft
Week 12: Submission of Final Draft
Week 14: Oral Presentation

Oral Presentation. Present your research proposal in class, 10-15 min., including questions and discussion.

Written Proposal. Students will use the APA format. The proposal will include cover sheet, abstract, spelling and grammar checked, citations and references. Maximum length, of the proposal will be 20 pp. double-spaced, bibliography included.

Required Reading

- Singleton, Royce A., Jr., and Bruce C. Straits. 2009. *Approaches to Social Research*, 5th ed. New York: Oxford Univ. Press. ISBN 0-19-537298-0 (4th ed. Or above)

Recommended Readings

- Kuhn, Thomas S. 1996. *The Structure of Scientific Revolutions*, 3rd ed. Chicago: Univ. of Chicago Press. ISBN 0-226-45808-3
- Booth, Wayne C., Gregory G. Colomb, and Joseph M. Williams. 2008. *The Craft of Research*. 3rd ed. Chicago: Univ. of Chicago Press. ISBN 978-0-226-06566-3
- Bui, Yvonne N. 2009. *How To Write a Master's Thesis*. Los Angeles: Sage. ISBN 978-1-4129-5710-6

Course Schedule

Week 1: The scientific context of social science research

Topics

- Introduction
 - Why Study Research Methods?
 - Methodological Approaches to the Social World
- The Nature of Science

- Science as Product
- Science as Process
- Logical Reasoning and Science

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch.s 1 and 2

Recommended Reading

- Russell, Bertrand. 1965. *On the Philosophy of Science*. Indianapolis: Bobbs-Merrill.
- Gould, Stephen Jay. 1981. *The Mismeasure of Man*. NY: Norton.

Week 2: Research Ethics

Topics

- Data Collection and Analysis
- Treatment of Human Subjects
 - Harm, Informed Consent, Deception, Privacy
- Making Ethical Decisions
- The Uses of Research: Science and Society
 - The Issue of Value Neutrality
 - The Application of Research Findings

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 3
- National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. 1979. "The Belmont Report. Ethical Principles and Guidelines for the Protection of Human Subjects of Research." National Institutes of Health, April 18. Available: <http://ohsr.od.nih.gov/guidelines/belmont.html>

Week 3: Elements of Research Design

Topics

- Origins of Research Topics
- Units of Analysis
 - Aggregate Data
 - Ecological Fallacy
- Variables

- Types of Variables
- Relationships
 - Relationships among Qualitative Variables
 - Relationships among Quantitative Variables
 - Relationships between a Qualitative and a Quantitative Variable
 - Statistically Significant Relationships
 - The Nature of Causal Relationships
- Formulating Questions and Hypotheses
- Research Purposes and Research Design

Stages of Social Research (research question to data analysis and interpretation)

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch.4

Week 4: Measurement

Topics

- The Measurement Process
- Operational Definitions in Social Research
- Levels of Measurement
- Reliability and Validity
- Reliability Assessment
 - *Test-Retest Reliability*
 - *Split-Half and Internal Consistency Reliability*
 - *Intercoder Reliability*
 - *Improving Reliability*
- Validity Assessment
 - *Subjective Validation*
 - *Criterion-Related Validation*
 - *Construct Validation*

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 5

Recommended Reading

- Alford, Robert R. 1998. *The Craft of Inquiry: Theories, Methods, Evidence*. NY: Oxford Univ. Press.

Week 5: Sampling

Topics

- Population Definition
- Sampling Designs
- Probability Sampling
- Nonprobability Sampling
- Other Sampling Designs
- Factors Affecting Choice of Sampling Design

Factors Determining Sample Size

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 6

Recommended Reading

- Ragin, Charles C., and Howard S. Becker, eds. 1992. *What Is a Case? Exploring the Foundations of Social Inquiry*. NY: Cambridge Univ. Press.

Week 6: Experimental Designs

Topics

- The Logic of Experimentation
- Stages in an Experimental design
- The Experiment as a Social Occasion
- Experimentation Outside the Laboratory
- Experimental Designs
 - Threats to Internal Validity
 - Pre-experimental Designs
 - True Experimental Designs
 - Factorial Experimental Designs
 - Quasi-experimental Designs

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch.s 7 and 8

Recommended Reading

- Ragin, Charles C., and Howard S. Becker, eds. 1992. *What Is a Case? Exploring the Foundations of Social Inquiry*. NY: Cambridge Univ. Press.

Week 7: Survey Research

Topics

- General Features of Survey Research
- The Uses and Limitations of Surveys
- Survey Research Designs
 - Cross-Sectional Designs
 - Longitudinal Designs

- Steps in Survey Research: Planning
- Face-to-Face and Telephone Interviewing
- Paper-and-Pencil Questionnaires
- Computer-Assisted Self-Interviews
- Mixed-Mode Surveys
- Field Administration
 - Interviewer Selection
 - Interviewer Training
 - Pretesting
 - Gaining Access
 - Interviewing
 - Supervision and Quality Control
 - Follow-Up Efforts

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 9

Recommended Reading

- Dillman, Don, et al. 2008. *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. Hoboken, NY: John Wiley.

Week 8: Mid Term

Week 9: Constructing the Survey Instrument

- The Survey as a Social Occasion
- Materials Available to the Survey Designer
 - *Open-Ended and Closed-Ended Questions*
 - *Direct and Indirect Questions*
 - *Response Formats*
 - *Visual and Media Aids*
 - *Existing Questions*
- "Sketches" or Preliminaries
 - *The Opening*
 - *The Placement of Sensitive and Routine Questions*
 - *Order, Flow, and Transition*
- Filling in the Sketch: Writing the Items
 - *Using Language Effectively*
 - *The "Frame of Reference" Problem*
 - *Reason Analysis*
 - *Memory Problems*
 - *Response Bias Problems*
 - *Format Considerations*
 - *Mixed-Mode Instrument Designs*
- Pretesting
 - *Cognitive Laboratory Interviews*
 - *Field Pretesting*

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 10

Recommended Reading

- Dillman, Don, et al. 2008. *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method*. Hoboken, NY: John Wiley.

Week 10: Analysis of available data and multiple methods

- Sources of Available Data

- Why do Research Using Available Data
- General Methodological Issues in Available-Data Research
 - Searching for and Procuring Available Data
 - Measurement of Key Concepts
 - Evaluation and Adjustment of Data
 - Assessment of Data Completeness
- Historical Analysis
 - Descriptive and Analytical History
 - Handling Documentary Evidence
 - Historical Interpretation
- Content Analysis
 - Selecting and Defining Content Categories
 - Defining the Unit of Analysis
 - Deciding on a System of Enumeration
 - Carrying Out the Analysis
- Multiple Methods
- Triangulation
- Multiple Measures of Concepts within the Same Study and across different studies
- Meta-Analysis

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch.s 12 and 13

Recommended Reading

- Ragin, Charles C., and Howard S. Becker. 1992. *What Is a Case? Exploring the Foundations of Social Inquiry*. NY: Cambridge Univ. Press.
- Brewer, John, and Albert Hunter. 1992. *Foundations of Multimethod Research: Synthesizing Styles*. Thousand Oaks, Calif.: Sage.
- Stoecker, Randy. 2005. *Research Methods for Community Change: A Project-Based Approach*. Thousand Oaks: Sage.

Week 11: Evaluation Research

Topics

- Framework and Sample Studies
- Types of Evaluation Research
 - Problem Identification: Conceptualization and Diagnosis
 - Policy Planning: Needs and Social Impact Assessments
 - Program Development: Formative Evaluation
 - Program Implementation: Program Monitoring
 - Program Evaluation: Effect and Efficiency Assessment
- Methodological Issues in Evaluation Research
 - Theory as a Guide to Research

- Research Design and Internal Validity
- Measurement Validity
- External Validity
- The Social and Political Context of Evaluation Research

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 14

Week 12: Data Processing and Elementary Data Analysis

Topics

- Preview of Analysis Steps
- Data Processing
 - *Editing*
 - *Coding*
 - *Entering the Data*
 - *Cleaning*
- Data Matrices and Documentation
- The Functions of Statistics in Social Research
- Inspecting and Modifying the Data
 - *Nominal- and Ordinal-Scale Variables*
 - *Interval- and Ratio-Scale Variables*
- Preliminary Hypothesis Testing
 - *Nominal- and Ordinal-Scale Variables*
 - *Interval- and Ratio-Scale Variables*

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 15

Week 13: Multivariate Data Analysis

- Modeling Relationships
 - Arrow Diagrams
 - Stochastic and Systematic Components
 - The Process of Modeling
- Elaboration: Tables and Beyond
- Multiple-Regression Analysis
- Other Modeling Techniques

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 16

Week 14: Research Writing

- Searching the Literature
- Using the Internet
- Using the Library
- Outlining and Preparing to Write
- Major Sections in Research Paper/Proposal and their organization
- Other Issues in writing and presentation of research

Required reading

- Singleton & Straits, *Approaches to Social Research*, ch. 17

