Course Description:
This course covers fundamental and contemporary research methodologies in business studies, including research design, survey method, econometric modeling and analysis, etc. The focus will be on how to develop appropriate research design for specific research questions, how to implement empirical analysis, and how to present and interpret the results. Moreover, students will present their own planned research projects, paying particular attention to (1) the contributions to existing knowledge and (2) justification for the methodology proposed.

Course Objectives:
- To understand the research processes, concepts, models, and paradigms that collectively form the foundation for business research.
- To gain the knowledge in identifying the major assumptions, strengths, and limitations of alternative research methods and obtain the hand-on knowledge on statistical techniques
- To develop the skills of evaluating and applying alternative research methods for different research questions
- To learn the skills of developing research papers for international journals

Reference Books:

Behavioral/Survey Research

Mathematical Modeling
Data Mining/Text Mining/Social Network Analysis

Empirical Methods

Course Assessment

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Class Participation</td>
<td>20%</td>
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<tr>
<td>Assignments</td>
<td>20%</td>
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<tr>
<td>Research Proposal</td>
<td>60%</td>
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<td>100%</td>
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1. **Class Participation (20%)**

   Attendance is a necessary condition for class participation. It is also important to attend all the classes because the most insightful ideas come primarily from class discussion.

   To encourage learning, students are expected to actively participate in class discussion. You should read carefully all required readings before each class. You should be ready to talk about the key message and methodological sophistication, of the papers under required readings.

   This part of the grade includes your attendance of the class (including timeliness), your role as a critique, as well as your contribution to class discussion of the assigned readings.

2. **Assignments (20%)**

   Required readings are attached to this syllabus. You must come to each class after thoroughly reading all the required readings.

   In some sessions, papers in the reading list may be assigned to each individual student. Please hand in a **hardcopy** (two-page, typed, single spaced, font size 12 or 11) of review of the assigned paper.
3. **Research Proposal (60%)**

Every student must submit a research proposal of an empirical study on one business topic by the end of the seminar. The research project will involve writing a major publishable paper focusing on business issues. You will need to read beyond the readings in the syllabus to write a research paper. It should be 10 – 15 pages plus references. It should be an empirical paper without data and results sections at this stage, but including analyses and results in the paper is highly encouraged.

The proposal should be developed with a targeted journal in mind. The proposal should consist of the following parts:

1. Research questions and potential contributions of your study
2. Literature review: a brief review of existing literature related to the research question
3. Theoretical grounds and hypotheses: a brief description of the theoretical grounds and a clear statement of the hypotheses
4. Sampling and data collection
5. Measure of key variables
6. Proposed analysis: discuss how you are going to analyze the data (not just what analytical technique you would use; at this stage, no actual data collection or analysis is expected)

**Notes**

- Each student will submit the research paper by the last day of the class, on which you will present your research (about 15-minute presentation plus 5-10 minute Q&A)
- Ideally, you should work on the empirical side of the paper during the rest of the year and send the full paper to major conferences in your field and then submit it to academic journals.

**Course Schedule**

<table>
<thead>
<tr>
<th>Session</th>
<th>Topic</th>
<th>Instructors</th>
<th>Date</th>
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<tr>
<td>1</td>
<td>Introduction: research process</td>
<td>Kevin Zhou</td>
<td>Sep 7</td>
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<tr>
<td>2</td>
<td>Sampling and data collection</td>
<td>Kevin Zhou</td>
<td>Sep 14</td>
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<tr>
<td>3</td>
<td>Measures: validity and factor analysis</td>
<td>Kevin Zhou</td>
<td>Sep 21</td>
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<tr>
<td>4</td>
<td>Data Analysis: Mediator/Moderator</td>
<td>Kevin Zhou</td>
<td>Sep 28</td>
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<tr>
<td>5</td>
<td>Mathematical modeling I</td>
<td>Wei Zhang</td>
<td>Oct 5</td>
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<tr>
<td>6</td>
<td>Mathematical modeling II</td>
<td>Wei Zhang</td>
<td>Oct 12</td>
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<tr>
<td>7</td>
<td>Web data collection</td>
<td>Michael Chau</td>
<td>Oct 19</td>
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<tr>
<td>8</td>
<td>Text mining and social network analysis</td>
<td>Michael Chau</td>
<td>Oct 26</td>
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<tr>
<td>9</td>
<td>Empirical methods I</td>
<td>Xin Wang</td>
<td>Nov 2</td>
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<tr>
<td>10</td>
<td>Empirical methods II</td>
<td>Xin Wang</td>
<td>Nov 9</td>
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<tr>
<td>11</td>
<td>Experimental design I</td>
<td>Echo Wan</td>
<td>Nov 16</td>
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<tr>
<td>12</td>
<td>Experimental design II</td>
<td>Echo Wan</td>
<td>Nov 23</td>
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<tr>
<td></td>
<td>Research Proposal Presentation</td>
<td>Proposal due</td>
<td>Nov 30</td>
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*The information contained in this syllabus is subject to change and any changes made to this syllabus will be announced in class.*
Sessions and Reading Lists

**How to Write Academic Papers**


1. **Introduction: research process** -- Kevin Zhou


**Classic Reading**


Chapter 2: Defining the Research Problem and Developing an Approach

Chapter 3: Research Design


2. **Sampling and data collection** -- Kevin Zhou


**Classic Reading**


Chapter 11 & 12: Sampling: Design and Procedures; Final and Initial Sample Size Determination
3. Measures: validity and factor analysis -- Kevin Zhou


**Classic Reading**


Fornell C and Larcker DF 1981 Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research* 18(1) 39-50


Churchill GA 1979. A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research* 16(1), 64-73


4. Data Analysis: Mediator/Moderator -- Kevin Zhou

David A. Kenny’s personal web site: http://davidakenny.net/


**Classic Reading**


5. Mathematical modeling I: Game Theory – Wei Zhang

In this segment we will learn the use of game theory models in decision making. The topics covered include: Static and dynamic games with information.

Main Reading:


In this segment we will learn how to apply game theoretical model on contract theory. We will mostly focus on adverse selection and moral hazard model. Chapters 2, 3, and 4.

Main Reading:


7. Web data collection -- Michael Chau

- To discuss the use of data publicly available on the web in research
- To study how to collect web-based research data, such as website data, social media data (e.g., blogs, Twitter, Facebook), auction data (e.g., eBay), and review data (e.g., Amazon, TripAdvisor).


Classic Reading


8. **Text mining and social network analysis -- Michael Chau**

- To provide an introduction to data mining and text mining
- To discuss how to use data mining in business research
- To study how to convert unstructured data (such as text or networks) into usable variables

**Main Reading:**


9. **Empirical methods I -- Xin Wang**

**Empirical Event Studies**

i. Empirical measures of abnormal performance;
ii. Size and power of event study tests;
iii. Long-horizon event studies;
iv. Pre- vs. Post-event change analysis;
v. Endogeneity issues for event studies;


**Classic Reading**


10. Empirical methods II -- Xin Wang

**Research Design with Linear Regressions**

i. Omitted correlated variables problem;
ii. Cross-sectional and time-series dependence;
iii. Research designs based on interaction item;
iv. Market efficiency tests based on linear model;
v. Endogeneity issues.


**Classic Reading**


11. Experiment Design I: Research Design and Validity


**Classic Reading**


12. Experiment Design II: Operationalization, Manipulation, Measure


**Classic Reading**


