Fall 2022

ISM 760: Contemporary Research Methods in Information Systems
Department of Information Systems & Supply Chain Management
Bryan School of Business and Economics

Contact Information
Instructor: Jiyong Park, Ph.D.
Office: Bryan 482
Office Hours: By appointment
E-Mail: jiyong.park@uncg.edu (the best way to contact me is by email)

Catalog Description
This course focuses on contemporary research methods for studying information systems phenomena, particularly those related to emerging technologies. Emphasizes enhancing doctoral students’ ability to identify, examine, and evaluate different contemporary methodologies regarding philosophical underpinnings of the methodology and dominant research frameworks for use of those methodologies, research paradigms and theoretical conceptualizations.

Detailed Description
Many questions in not only information systems (IS) research but also broader business and social science research are causal in nature: what would happen to individuals, organizations, or the society, if part of their environment were changed? — for example, the impact of IT investment and IT governance on organizational performance, the peer effect on social media, the effect of data analytics on innovation, or the effect of home-sharing platforms on local employment. Causal inference encompasses statistical (econometric) and computational methods for studying such questions and determining what causes what. There has been increasing emphasis on causal inference in conducting empirical research, as featured in the 2021 Nobel Prize in Economics that goes to the pioneers of natural experiments for causal inference.

The primary purpose of this course is to expose doctoral students to contemporary research methods with a particular focus on causal inference, stemming from the field of economics of IS. Further, this course explores how recent advances in computational methods, such as machine learning and NLP, are applied in IS research.

Course Learning Objectives
This course aims to guide doctoral students to become independent scholars who can produce original, high-quality research in IS discipline. Upon completing this course, students will be able to:
- Understand the concepts and methods for causal inference in IS research
- Determine what methods are best suited for research questions and data
- Conduct an in-depth literature review so that they can find a missing puzzle to fill in the literature
- Produce high-quality research proposals in IS research
Course Website
All information and materials pertaining to this course will be available on the Canvas platform (https://uncg.instructure.com/). Students will be responsible for any information or announcements updated on Canvas. All graded deliverables will be submitted electronically through Canvas.

Course Structure
This face-to-face course will be taught in a seminar style with a blend of lectures and in-class presentations by students. There is no required textbook. All lecture notes needed for this course are available on Canvas.

Grading Policy

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Class Presentations</td>
<td>50%</td>
</tr>
<tr>
<td>Research Proposal (Presentation/Report)</td>
<td>15%</td>
</tr>
<tr>
<td>Final Paper (Presentation/Report)</td>
<td>25%</td>
</tr>
<tr>
<td>Final Paper (Revision)</td>
<td>10%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Letter Grades According to Total Percentage

In-Class Presentations (50%)
Students will present a selected research paper in each week’s class (10 presentations in total). The list of papers will be provided. Given that it will be during class hours, late submission will not be accepted.

Research Proposal (15%)
Students will propose their ideas for the final paper by conducting an in-depth literature review to find a missing puzzle to be filled in the literature and designing a high-level empirical strategy.

Final Paper (35%)
Students will produce original research proposals that consist of (i) theoretical development and hypotheses, (ii) data (real or synthetic), and (iii) data analysis plan. Preliminary results are highly recommended, but not required. The final paper will follow the format and standard of Short Papers in International Conferences on Information Systems (ICIS) (see https://icis2022.aisconferences.org/submissions/types-of-submissions). As revision process is as important as paper development for publication, the final paper will undergo one revision based on the review comments provided by the instructor. It is not allowed to reuse a proposal for another class or submit ongoing research started before Fall 2022.
Tentative Class Schedule

The following schedule provides general guidelines and is subject to change. A detailed schedule prior to the beginning of each week will be posted on Canvas. It is the student’s responsibility to stay on track with course materials and quizzes/assignments on a weekly basis to be successful in the course.

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Aug. 18</td>
<td>What is Causal Inference?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Aug. 25</td>
<td>Conducting Empirical Research for Causal Inference</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Selection on Observable Strategies</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Sep. 1</td>
<td>Randomized Controlled Trial (RCT)</td>
<td>In-Class Presentation 1</td>
</tr>
<tr>
<td>4</td>
<td>Sep. 8</td>
<td>Difference-in-Differences (DID) I</td>
<td>In-Class Presentation 2</td>
</tr>
<tr>
<td>5</td>
<td>Sep. 15</td>
<td>Difference-in-Differences (DID) II</td>
<td>In-Class Presentation 3</td>
</tr>
<tr>
<td>6</td>
<td>Sep. 22</td>
<td>Synthetic Control (SC)</td>
<td>In-Class Presentation 4</td>
</tr>
<tr>
<td>7</td>
<td>Sep. 29</td>
<td>Lending Credence to Empirical Research</td>
<td>In-Class Presentation 5</td>
</tr>
<tr>
<td>8</td>
<td>Oct. 6</td>
<td><strong>Research Proposal Presentation</strong></td>
<td>Research Proposal Report Due</td>
</tr>
<tr>
<td>9</td>
<td>Oct. 13</td>
<td>(No Class) Fall Break</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Oct. 20</td>
<td>Instrumental Variable (IV)</td>
<td>In-Class Presentation 6</td>
</tr>
<tr>
<td>11</td>
<td>Oct. 27</td>
<td>Regression Discontinuity (RD)</td>
<td>In-Class Presentation 7</td>
</tr>
<tr>
<td>12</td>
<td>Nov. 3</td>
<td>Machine Learning I: Harnessing Unstructured Data</td>
<td>In-Class Presentation 8</td>
</tr>
<tr>
<td>13</td>
<td>Nov. 10</td>
<td>Machine Learning II: Heterogenous Treatment Effect</td>
<td>In-Class Presentation 9</td>
</tr>
<tr>
<td>14</td>
<td>Nov. 17</td>
<td>Machine Learning III: Causal Machine Learning</td>
<td>In-Class Presentation 10</td>
</tr>
<tr>
<td>15</td>
<td>Nov. 24</td>
<td>(No Class) Thanksgiving Day</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Dec. 1</td>
<td><strong>Final Presentation</strong></td>
<td>Final Paper Report Due</td>
</tr>
<tr>
<td>17</td>
<td>Dec. 8</td>
<td>(No Class) Final Revision</td>
<td>Final Paper Revision Due</td>
</tr>
</tbody>
</table>

➢ Topics can be adjusted depending on the progress of the class.
UNCG Policy for COVID-19

As we return for Fall 2022, all students, faculty, and staff and all visitors to campus are required to uphold UNCG’s culture of care by actively engaging in behaviors that limit the spread of COVID-19. While face-coverings are optional in most areas on campus, individuals are encouraged to wear masks. All individuals and visitors to campus are asked to follow the following actions:

• Engaging in proper hand-washing hygiene.
• Self-monitoring for symptoms of COVID-19.
• Staying home when ill.
• Complying with directions from health care providers or public health officials to quarantine or isolate if ill or exposed to someone who is ill.
• Completing a self-report when experiencing COVID-19 symptoms, testing positive for COVID-19, or being identified as a close contact of someone who has tested positive.
• Staying informed about the University's policies and announcements via the COVID-19 website.

Students who are ill, quarantining, or isolating should not attend in-person class meetings, but should instead contact their instructor(s) so alternative arrangements for learning and the submission of assignments can be made where possible.

As we continue to manage COVID-19 on our campus, we are following the lead of the local health department and we will adjust our plans to balance student success, instructional requirements, and the hallmarks of the collegiate experience with the safety and wellbeing of our campus community.

Statement of Students’ Rights and Responsibilities

As a student in my class, you have explicit rights and responsibilities. Your full understanding and acceptance of the following rights and responsibilities can lead to more effective learning and more productive use of our time together.

You have the right to expect:
1. Your professor to be prepared for each class, to start class promptly at the designated time and to end class at the designated time.
2. Your professor to teach all scheduled classes or arrange for a qualified substitute if it is necessary to miss class because of illness or University approved commitments.
3. Clear statements of course expectations, policies, testing and grading practices and student performance.
4. Your professor to hold a reasonable number of office hours to discuss assignments or to assist you
with course matters.
5. Knowledgeable assistance from your professor regarding class assignments and course content.
6. Professional behaviors reflecting equitable treatment, ethical practices and respect for your rights.
7. Opportunities to challenge ideas and defend your beliefs in a professional manner.
8. To be challenged to grow both academically and professionally.
9. Information regarding career opportunities related to ISM programs.
10. Your professor to abide by University policies.
11. Fairness and clarity in evaluation of your performance.
12. Adequate opportunity to appeal any perceived violations of the above rights.

You have specific responsibilities to:
1. Plan your study and work schedule appropriately to allow sufficient time to do quality class work. 
   I suggest you devote at least 6 to 8 hours per week to this class.
2. Arrive at each class on time and be prepared to discuss assigned readings and participate in 
   discussions.
3. Complete assignments by due date and submit quality work.
4. Understand and follow course policies as explained in class and in the syllabus.
5. Commit yourself to grow both academically and professionally.
6. Work effectively and cooperatively as a team member on group projects if so assigned.
7. Practice ethical behaviors and display respect for rights of others.
8. Contact your instructor and discuss circumstances which may prevent acceptable performance and 
   to make such contact on a timely basis.
9. Fully understand and abide by the UNCG Academic Integrity Policy and other University policies 
   relating to student conduct.
10. Report observed violations of the UNCG Academic Integrity Policy.

See the Student Section of the Bryan School website for additional information about “Faculty and Student 
Guidelines,”

Academic Integrity, Ethical Issues and the Honor Code Policies

Students are responsible for becoming familiar with the Academic Integrity Policy in all its aspects and for 
indicating their knowledge and acceptance of the Policy by signing the Academic Integrity pledge on all 
major work submitted for the course. All individual assignments must be done by only you. Individuals 
should not work on assignments together. A single failure to follow this policy will result in a grade of 0 
on that assignment; subsequent violations of this policy will result in a grade of F for the course. University 
students are expected to conduct themselves in accordance with the highest standards of academic honesty. 
I will pursue cheating as far as the university allows me. Specific information on the Academic Integrity 
Policy may be found on the UNCG web site at http://academicintegrity.uncg.edu.