Econ 5100-01 – Statistical Applications and Quantitative Methods

CLASS DETAILS:
Times: Monday, 6.00 PM – 9.00 PM
Room: Pigott 203
Office Hours: Tuesday and Thursday 1.00–1.55 PM, or by appointment
Syllabus updated: September 27, 2018

COURSE DESCRIPTION: The primary objective of this course is to help you develop the analytical skills you will need to critically evaluate business research throughout your career, and place you on a firm footing for the subsequent MSBA courses. Through lectures, discussions, readings, practice problems, and a case study, you will have the opportunity to develop your skills in several areas: applying statistical decision-making tools and interpreting and communicating quantitative information.

STATISTICAL SOFTWARE: This course places heavy emphasis on using the open source statistical programming language R. It is very powerful, widely used for data analysis, and have an active user-base of statisticians who develop new modules for it. Prior knowledge or experience of R is not required to succeed in this course, but it would be helpful if you know how to write simple scripts in other languages. R runs on Windows, Mac, and Linux and is free.

LEARNING OUTCOMES: On successful completion of this course (i.e. by passing this course), you will be able to:

• identify and apply the appropriate applications of multiple regression,
• effectively communicate the results of your findings,
• use these tools and/or their results in the management decision-making process.

CANVAS: All course material and problem sets will be on Canvas. Make sure you check it frequently and complete on-line problem sets before the due date.

TEXTBOOK: We will use several online textbooks. Links to these books are given on Canvas.

GRADING: Course grades will be assigned at the end of the quarter based on your performance in class using the following percentages:

• 50% Problem sets
• 15% Midterm
• 35% Case study

The grade schedule is:

A range: 90-100% of total points — Superior performance
B range: 80-89% of total points — Good performance
C range: 70-79% of total points — Adequate performance
D range: 60-69% of total points — Poor performance
F range: less than 59% of total points — Failing
CLASS STRUCTURE: Understanding and utilizing statistical concepts takes work. In many ways, it is just like learning a new language; the best way to learn is through practice and repetition. You must have read the material covered before class. The tentative course schedule is on the last page.

PROBLEM SETS: Doing problems is essential to mastering the course material. To receive credit, the assigned problems must be done on Canvas by their due dates. Due dates are announced on Canvas. Working together on homework problems is permitted. Homework assignments can be done individually or conducted in groups of up to 3 students, but each student have to submit their work. Late assignments will not be accepted.

I strongly encourage you to do additional problems on your own; you are always welcome to ask me if you have questions about additional problems.

CASE STUDY: The case study is your opportunity to use quantitative methods to address real-world problems. The case study is graded on the quality of the technical analysis and interpretation of results as well as the quality of writing and presentation. You will get an outline of the grading rubric when we discuss the case study. This will be a group project. Instructions will be provided in class.

CONTACT INFORMATION:
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Research web site: http://www.clausportner.com

ELECTRONIC DEVICES: The use of laptops, netbooks, tablets, etc, in class to take classnotes, view slides or work on class projects is allowed. You need to ask permission to use laptops, netbooks, tablets, cellphones, etc, in class for any non-class related activity (including instant messaging, web-browsing, looking at cat videos, etc.).

EMAIL: Email is a blessing and a curse. It is an efficient means for requesting a meeting, but it can tempt you to avoid taking responsibility for ordinary course management. I will reply to emails that request a meeting, or a simple clarification of a course topic, but a detailed explanations of course material are best reserved for a face-to-face conversation. If you email me before noon I will do my best to respond the same day, otherwise you will receive a response the next business day. Make sure your email has a suitable subject line (Good: “Request for meeting to discuss Chapter 3”; bad: “Hey prof”). Do not expect a response over the weekends or over holidays. Finally, do not use Canvas to contact me.

ACADEMIC RESOURCES: I strive to create a learning environment in which you can be incredibly successful. My goal is to create and improve the learning environment throughout the quarter based on my own observations of the course and your feedback on what would help you learn more. In return, I ask and encourage you to make the most of this learning opportunity. Also, please take advantage of the academic support services available to you at the university. Even if you have had excellent study skills in the past, it is very easy to slip into suboptimal habits and these services can help you excel in your studies.

- LIBRARY AND LEARNING COMMONS http://www.seattleu.edu/learningcommons/.
- **WRITING CENTER:** The Writing Center employs undergraduate writing consultants who assist students at all stages of the writing process. Consultants will help students begin writing tasks, organize and develop first drafts, and revise and edit later drafts.

- **LEARNING ASSISTANCE PROGRAMS:** Learning Assistance Programs provide peer tutoring, facilitated study groups, and learning strategy development through scheduled workshops and individual meetings with a learning specialist.

**ACADEMIC INTEGRITY TUTORIAL:** [http://www.seattleu.edu/academicintegrity/](http://www.seattleu.edu/academicintegrity/)

**ACADEMIC POLICIES ON THE REGISTRAR WEBSITE** Be sure that you understand the following university academic policies, posted on the Registrar’s website:

- Academic integrity policy
- Academic grading grievance policy

[https://www.seattleu.edu/redhawk-axis/academic-policies/](https://www.seattleu.edu/redhawk-axis/academic-policies/)

**NOTICE FOR STUDENTS CONCERNING DISABILITIES** If you have, or think you may have, a disability (including an ‘invisible disability’ such as a learning disability, a chronic health problem, or a mental health condition) that interferes with your performance as a student in this class, you are encouraged to arrange support services and/or accommodations through Disabilities Services staff located in Loyola 100, (206) 296-5740. Disability-based adjustments to course expectations can be arranged only through this process.

**OFFICE OF INSTITUTIONAL EQUITY** Title IX of the Education Amendments of 1972 (Title IX) prohibits discrimination based on sex in educational programs or activities that receive Federal financial assistance. This prohibition includes sexual misconduct, which encompasses sexual harassment and sexual violence. Seattle U remains committed to providing a safe and equitable learning, living, and working environment. Seattle U offers emergency, medical, and other support resources, as well as assistance with safety and support measures, to community members who have experienced or been impacted by sexual misconduct.

Seattle U requires all faculty and staff to notify the University’s Title IX Coordinator if they become aware of any incident of sexual misconduct experienced by a student.

For more information, please visit [https://www.seattleu.edu/equity/](https://www.seattleu.edu/equity/). If you have any questions or concerns, you may also directly contact the Title IX Coordinator in the Office of Institutional Equity (email: oie@seattleu.edu; phone: 206.296.2824) University Resources and Policies
# Provisional Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>10-01</td>
<td>Introduction to class and R</td>
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<tr>
<td>10-08</td>
<td>Review of statistical concepts and data exploration</td>
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<tr>
<td>10-15</td>
<td>Simple linear regression</td>
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<tr>
<td>10-22</td>
<td>Multiple linear regression</td>
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<tr>
<td>10-29</td>
<td>Regression diagnostics</td>
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<tr>
<td>11-05</td>
<td>Mid-term and Model specification (dummies, interaction, and non-linear effects)</td>
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<td>11-12</td>
<td>No class – Veteran’s Day</td>
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<td>11-19</td>
<td>TBD – Guest lecture</td>
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<tr>
<td>11-26</td>
<td>Resampling methods</td>
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<tr>
<td>12-03</td>
<td>A very brief introduction to Bayesian statistics</td>
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