Your learning is my primary concern in this course, so I may modify the schedule if, for instance, we discover we need to spend more time on a certain topic and less on another. So, you should know all the information given in this syllabus and check if the syllabus has been updated.

**Description of the Course:** Data can point the way to more effective policy and business decisions. Statistical and quantitative methods are used throughout business, government and the non-profit sector of the economy. An effective participant in decision-making must be able to, at a minimum, understand and interpret statistical information. This course builds on concepts and analytical techniques taught in Introduction to Business Statistics (Economic 2100), introducing students to more advanced statistical and quantitative methods.

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

1. Deepen your understanding of fundamental statistical concepts such as variation and inference.
2. Be aware of the quantitative tools that can be utilized to make effective business and policy decisions.
3. Be able to use regression analysis to identify relationships between variables, accurately interpreting the results while understanding the limitations of those results.
4. Understand the assumptions underlying the ordinary least squares estimation method.
5. Convey the results of statistical analysis clearly, accurately, and in a manner appropriate to a given audience (public, professional, or academic).

**Prerequisite:**
ECON 2100, and MATH 1130, MATH 1331 or MATH 1334.

---

1 *Buying these books is optional. You can find the slides, assignments and supplementary materials on Canvas.*


**Instructional methods**

Education research shows that your learning is greatest when you are actively involved in making sense of new concepts (“constructing knowledge”) and when you do this in social settings. This model is technically called “social constructivism.” We will use this model throughout the course, so you can expect to

- Be engaged in plenty of classroom activities to build on the readings you have done for each class;
- Work in small groups during class and for those groups to change on a regular basis;
- Ask your instructor for clarifications, rather than expecting lectures.

I hope you find this an engaging and enjoyable approach to learning.

**Evaluations**

**Homework Assignments, Exams and Grading**

**Assignments: (20% of your overall grade)**

There will be assignments every week (starting from 2nd week) except exam weeks. Assignments will account for 20% of your overall grade. They will be posted on Canvas. Assignments should be submitted online (Send a word processed exported as PDF file and/or Codes - *.R files plus data if there is any to my email – Hand writing is not acceptable). You may discuss the assignments with your colleagues, but you should write your answers individually.

**IMPORTANT!** I will not let anyone do the homework late because they “didn’t know it was due.” Also, as we all know, computers are not 100% reliable. Therefore, you should NOT wait until the last minute to do your homework. I cannot be sympathetic to the excuses such that “I would have had my homework done but my internet went out”. If you do the homework in advance, then you can avoid such problems. If, however, you have a documented approved excuse, then your homework grade will be re-weighted.

**“** If you do the assignment and I see that you spend some time to study and try to implement what you have learned in the class (say your grade is more than 65%), don’t worry about the grade. I’ll give you the full grade for that assignment since what is important for me is you read the course materials and try to understand it properly.

**Class Participation (15% of your overall grade)**

Class participation is based on your attendance (5%) and your scores in a series of quizzes (10%). For your class participation grades, I will ask you to solve problems or participate in a series of quizzes. These are NOT announced in advance. Thus, class attendance is compulsory. You must participate in all the quizzes to prove your attendance.
To participate in the quizzes, you must at least have a laptop, tablet, iPad or any smartphone (Android or iOS) with browser and internet access. (You must bring your laptop for the programming part of the class.)

We use Kahoot platform for the quizzes which can be found at:


iOS: https://itunes.apple.com/us/app/kahoot!/id1131203560?mt=8

Website: https://kahoot.it

In the first lecture I’ll explain how to use Kahoot platform.

Exams: (50% of your overall grade)

There will be two midterm exams (I’ll drop the one with the lowest grade) and a comprehensive final exam. The mid-term exam (after dropping the lowest one) and the final exam account for 20% and 30% of your overall score, respectively.

All exams will be administered in strict observance of Seattle University’s Honor Code, without compromise or exception. Any violation of the University Honor Code will be reported to the Honor Code Council.

*One catch, Midterms and final will be curved, if need be, to bring the average up.

Exam dates:

1st Midterm: Friday, February 1, 2019

2nd Midterm: Friday, March 1, 2019

Final Exam: Thursday, March 21, 2019 (from 10:00AM to 11:50AM)

Group Project: (15% of your overall grade plus up to 5% bonus points)

The group project is an important part of this class. It is an opportunity to use the tools you learned to model an economics phenomenon of your choice. At the end of the first week (January 11), I will divide the class into groups of four or five students. Each group should submit a short (Max 2 pages) description of the project by the end of the second week (January 18). On March 1, each group will submit the complete draft of the project that includes: abstract, introduction (with literature review), description of data, empirical model, results and discussions, and conclusion. I will give you my comments and feedback by March 10, so you can revise your project. Submission of the final version of your group project is due to March 15. The group project accounts for 15% of your overall grade.

In addition, to compensate for some of the missed assignments or class participation activities, you have a chance to earn up to 5% adding to your overall grade as bonus points by presenting your project in the class on during the last week of the classes.
The instruction for group projects and some useful tips and resources will be uploaded on the Canvas at the end of the first week (Jan 11).

**Grading Scale:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93-100</td>
</tr>
<tr>
<td>A-</td>
<td>90-92</td>
</tr>
<tr>
<td>B+</td>
<td>87-89</td>
</tr>
<tr>
<td>B</td>
<td>83-86</td>
</tr>
<tr>
<td>B-</td>
<td>80-82</td>
</tr>
<tr>
<td>C+</td>
<td>77-79</td>
</tr>
<tr>
<td>C</td>
<td>73-76</td>
</tr>
<tr>
<td>C-</td>
<td>70-72</td>
</tr>
<tr>
<td>D+</td>
<td>67-69</td>
</tr>
<tr>
<td>D</td>
<td>63-66</td>
</tr>
<tr>
<td>D-</td>
<td>60-62</td>
</tr>
<tr>
<td>F</td>
<td>0-59</td>
</tr>
</tbody>
</table>

**Statistical Software:**

We mainly use R⁴ which is a free (open resource) statistical programming language available for Windows, Mac, and Linux. Also, we will use Excel in some part of the course.

**Lectures and Laptop Policy:**

You will need to bring your own laptop or use an Albers laptop for the “Empirical Applications” section of each lecture.

---

**Academic Resources:**

My goal is to create a learning environment in which you can be incredibly successful. I will work hard 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. 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 easy to slip into suboptimal habits and these services can help you excel in your studies.

**LIBRARY AND LEARNING COMMONS⁵**

**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. To schedule an appointment, call 206-296-6239.

**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. To schedule an appointment, call 206-398-4450.

**MATH LAB**

The Math Lab is a drop-in service available to students enrolled in lower division mathematics courses. Students can stop by the lab to work with a tutor who will assist them with their particular mathematics assignments. Visit us on the 2nd floor.

---

⁴ [https://www.r-project.org/](https://www.r-project.org/)

⁵ [http://www.seattleu.edu/learningcommons/](http://www.seattleu.edu/learningcommons/)
**RESEARCH SERVICES**

Research Services are available to students at any stage in the research process. Students can receive help in person, by chat, phone, or email, or by scheduling a research consultation. To learn more, or for immediate assistance, call 206-296-6230.

**MEDIA PRODUCTION CENTER**

Lemieux Library's Media Production Center, located on the first floor of the library, offers the tools, training, and space for students, clubs, faculty, and staff to create their own original multimedia productions.

**Academic Integrity Policy:**

Seattle University is committed to the principle that academic honesty and integrity are important values in the educational process. Academic dishonesty in any form is a serious offense against the academic community. Acts of academic dishonesty will be addressed according to the Seattle University Academic Honesty Policy. The policy can be found at the address below:

https://www.seattleu.edu/academic-integrity/resources-for-students/

If you are not sure whether a particular action is acceptable according to the Academic Honesty Policy, you should check with your instructor before engaging in it.

**Resources for Disability**

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 in the Learning Center, Loyola 100, (206) 296-5740. Disability-based adjustments to course expectations can be arranged only through this process.

**Policy for Missed Classes and Exams:**

**Class:** If you expect to be absent or to be late, please e-mail me beforehand (or as soon as possible). If for any reason you do miss a class, be sure to obtain notes from one of your peers to catch up. If, after going over those notes and checking the readings for the class, you still have questions, please arrange to meet me during office hours to discuss. Remember to bring those notes with you so that we can work on your specific, focused questions.

**Exam:** There will not be any make-up midterm exams*. Anyone who missed an exam without being excused will get a score of zero for that exam. The only acceptable reasons for missing an exam are serious illness and family emergency. To be excused, you need to get your reason for missing the exam approved either by the Dean of Student’s Office (for family emergency) or Health Center (for physical illness). If you have appropriately approved excused absence from an exam, then I will either give you a make-up exam or weigh your other exams more heavily, depending on the circumstances and my best judgment.
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
- PROFESSIONAL CONDUCT POLICY

Hints for a Successful Quarter: It is almost common to hear students say “I understand everything you say in class, so I know the material. Why did I get such a bad grade on the exam?” The answer is simple; the class objective is for you to learn how to solve quantitative methods problems, not to understand someone else’s solution. Quantitative problems almost always sound simple when someone who understands it explains it to you – the key is to be able to explain it on your own and practice.

Course Outline

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Lecture</td>
<td>Syllabus and Introduction</td>
</tr>
<tr>
<td>1st - 4th Weeks</td>
<td>Simple Linear Regression</td>
</tr>
<tr>
<td>February 1, 2019</td>
<td>1st Midterm Exam</td>
</tr>
<tr>
<td>5th – 8th Weeks</td>
<td>Multiple Regression and Applications</td>
</tr>
<tr>
<td>March 1, 2019</td>
<td>2nd Midterm Exam</td>
</tr>
<tr>
<td>9th &amp; 10th Weeks</td>
<td>Analysis of Variance and Class Presentations (if any)</td>
</tr>
<tr>
<td>March 21, 2019 (10:00AM-11:50AM)</td>
<td>Final Exam</td>
</tr>
</tbody>
</table>

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