



ECN 221 – Business Statistics - Spring 2021 Online Bachelor of Science

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Virtual Office Hours:

By appointment

COURSE DESCRIPTION & OBJECTIVES

Business Statistics is a course that provides you with the basic tools of collecting, analyzing, presenting, and interpreting data for the purpose of making objective business decisions. The particular focus of this class will be on basic descriptive statistics, probability and sampling distributions, hypothesis testing and simple regression analysis. Tools taught in Business Statistics can be used to study advertising, finance, marketing and other business topics.

Learning objectives include students' being able to: identify and interpret graphical displays; calculate descriptive statistics within excel; calculate and interpret probabilities; determine appropriate sampling techniques; construct confidence intervals; conduct hypothesis tests and draw conclusions based on those tests; read the ANOVA table from a regression; perform regression analysis and interpret the results.

W.P. CAREY BUSINESS SCHOOL GOALS:

The W.P. Carey School of Business has established the following learning goals for its graduates:

1. **Critical Thinking**
2. Communication
3. **Discipline Specific Knowledge**
4. Ethical Awareness and Reasoning
5. Global Awareness

Items in bold have significant coverage in this course.

Detailed Criteria for Learning Goals

The economics department has established the following criteria for the first three undergraduate learning goals:

- Discipline Specific Knowledge
 - Demonstrates knowledge of resource allocation mechanisms and their implications for efficiency, distribution, employment, and growth
 - **Demonstrates knowledge of the models, methods and statistical techniques used by economists to study human behavior**
 - Demonstrates knowledge of the effects of government policies on efficiency, distribution, employment, price stability and growth
- Critical Thinking
 - Identifies a question (or problem) and gathers relevant information to analyze it
 - **Draws inferences that are supported by the data/evidence and the analysis.**
 - Synthesizes analysis and theory to draw conclusions or make recommendations
- Communication
 - Constructs a logical argument based on economic principles and observed evidence
 - Effectively communicates in oral form
 - Effectively communicates in written form

The items in bold have significant coverage in this course.

COURSE LEARNING GOALS:

At the end of the course, you should be able to:

1. identify graphical displays, select the correct graphical display for data in various settings and select the correct interpretation of graphical displays.
2. calculate basic descriptive statistics with and without excel and select the proper conclusions based on those statistics.
3. calculate probabilities and select the appropriate conclusions based on those probabilities.
4. pick the appropriate sampling technique for specified practical situations and pick statements that follow from the Central Limit Theorem.
5. construct and correctly interpret confidence intervals.
6. calculate a t-test statistic, test hypotheses using the test statistic and/or p-value and correctly choose the interpretation or application of the result of the hypothesis test.
7. In the context of a regression, be able to read an ANOVA table in excel, identify the components of the results and correctly interpret those results.
8. run a regression using data provided and identify and correctly interpret the results.

RPNOW

You will be taking an exam that utilizes the Remote Proctor Now (RPNOW) system. This system allows you to take your exams at a convenient time as allowed by your school or organization, while proctoring your exam by recording the visual, audio, and desktop aspects of the exam and exam environment.

It is critical to read the section on the use of RPNOW later in this syllabus.

Virtual Office Hours and Meetings

See your course site for the link and instructions on using zoom.us.

COURSE MATERIALS

- **Textbook**
 - *Statistics for Business and Economics*, 14th edition by Anderson, Sweeney, Williams, Camm, Cochran, Fry and Ohlmann; Cengage.
 - The ebook will be available in WebAssign which will also be the place where you will find the homework assignments.
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Course Assignments/Grading

Course Grading Policies

Description	Percent
Homework 0 – Syllabus Assignment, requires RPNOW	0.1% bonus
Playposit Questions	5%
Homework, 11 equally weighted assignments, lowest score is dropped. These assignments are done in WebAssign. There is a 12 th assignment that is optional and can be used to replace a low score on another homework assignment.*	20%
Exam 1, requires RPNOW (due 1/25, a Monday)	25%
Exam 2, requires RPNOW (due 2/8, a Monday)	25%
Exam 3, requires RPNOW (due 2/27, a Saturday)	25%
Final Exam, requires RPNOW (due 3/1, a Monday)	25%
Out of exams 1, 2, 3, and the final only 3 exams count. The lowest exam score will be dropped.	

**In total there are 12 assignments, 11 required and one optional, and the two lowest are dropped from the grading. That is, only the 10 best scores will count towards your grade. Of the 12 assignments one is completely optional and it can be used to replace another low score. The optional assignment is for the module on ANOVA which is an optional module. An ANOVA table will be used in the module on regression and so covering the ANOVA module can be helpful in preparing you to better understand that module but the ANOVA module itself is not a required module.*

Final semester grades will be determined as follows:

Overall %	Assigned Grade
97.5 or more	A+
92.5 – 97.49	A
90.0 – 92.49	A-
87.0 – 89.99	B+
83.0 – 86.99	B
80.0 – 82.99	B-
78.0 – 79.99	C+
70.0 – 77.99	C
65.0 – 69.99	D
0 – 64.99	E

You must pay close attention to your points and **send a message via the Canvas inbox system** if you believe there is a grade error. **Note: you must do so within one (1) week of any grade posting—see *Grade Appeals* below. PLEASE** include the topic – for example, “ECN 221 Online – Homework 1 Question” - in the subject line of emails within Canvas.

Online Assignments

Homework within WebAssign:

- All assignments are individual work.
- Homework assignments consist of varying numbers of questions.
- You must submit each assignment by its due date in order to receive credit. Homework submitted after the deadline will receive a 0.
- Homework does not “auto-submit.” You must use the submit button to turn it in.
- Assignments are due on **Wednesdays** and **Saturdays**.
- There are no make-ups for missed assignments.

Online Examinations

Within Course LMS or WebAssign:

- Three mid-term exams and a final exam (4 exams in total of which the best 3 scores count toward the grade and the lowest exam score is dropped)

Exam Policies:

- All exams are given online and require RPNOW
- Closed-book, closed-notes, and time-limited

- Exams will require you to perform statistical calculations using Excel.
- You must complete exams in one sitting; do not leave your computer
- Access to exams 1, 2, and the final starts at 1:00 a.m. on the relevant Friday and ends at 11:58 p.m. AZ Time on the following Monday. Exam 3 opens on Wednesday Feb 24 at 1:00a.m. and closes on Saturday Feb 27 at 11:58 p.m. Exams submitted after 11:58 p.m. on the due date will receive a 0.
- Inability to submit an exam due to technical glitches on your end is not an acceptable reason for a make-up
- Start exams early to allow time to get support from the ASU Help Desk if necessary
- Re-take the Honor Code quiz a day or so before each exam to verify RPNOW is working on your computer (this helps to avoid problems *during* exams)
- Late submissions will be assigned a score of 0.
- If you miss one exam from Exams 1-3 then your score on the Final Exam be used to replace your missing exam score. If you miss more than one exam then you will get a 0 on any additional exams missed.
- Because the lowest exam score is dropped, the final exam is optional if have taken all previous exams and have a passing grade.

Exam Make-Ups

Departmental rules allow a make-up exam **only** under very limited circumstances. In general, a make-up exam will be allowed only **with documentation** and for the following:

- Medical emergencies requiring hospitalization;
- Religious holidays precluding work;
- Death of an immediate family member: sibling, parent, child or spouse; or
- A conflict with an ASU-sanctioned activity where you participate as an official representative of ASU.

In the event of a make-up, I reserve the right to offer an exam that has been significantly modified from the original exam in order to maintain academic integrity including offering an essay exam.

Absent the above circumstances, there will be no changes to the scheduled exams.

In Case of Technical Issues While Exam In Progress (e.g., You Get Kicked Out of the Exam)

Re-enter the exam and continue immediately because your time continues counting down in Canvas. Send me an email **immediately** if you cannot re-enter the exam. I cannot extend your time if it has expired.



Schedule

Spring 2021 course runs 1/11/2021 to 3/2/2021. Weeks run Monday – Sunday.

Course Week	Assignments Open/Due
Week 1 M 1/11- Su 1/17	Homework 0 – Syllabus Assignment in Canvas (due 1/16) Homework 1 (due 1/13) Homework 2 (due 1/16)
Week 2 M 1/18 - Su 1/24	Homework 3 (due 1/20) Homework 4 (due 1/23) Exam 1 (opens 1/22 , due 1/25)
Week 3 M 1/25 - Su 1/31	Exam 1 (opens 1/22, due 1/25) Homework 5 (due 1/27) Homework 6 (due 1/30)
Week 4 M 2/1 - Su 2/7	Homework 7 (due 2/3) Homework 8 (due 2/6) Exam 2 (opens 2/5 , due 2/8)
Week 5 M 2/8 - Su 2/14	Exam 2 (opens 2/5, due 2/8) Homework 9 (due 2/13)
Week 6 M 2/15 - Su 2/21	Homework 10 (due 2/17) Homework 11 (due 2/20) <i>*this assignment is optional, can be used to replace a low score</i>
Week 7+ M 2/22 - T 3/2	Homework 12 (due 2/24) All Playposit assignments are due by 2/24 Exam 3 (opens 2/24, due 2/27) Final Exam (opens 2/26, due 3/1) 3/2 is the day to resolve grade disputes and concerns
End of course	Seven week spring schedule

Communication & Email Policy: "3-before-me"

When you have a question, please remember to check the following 3 sources for an answer before posting a question on the discussion board for me to answer (3 sources before me):

1. Syllabus
2. Announcements (on Canvas)
3. The discussions board forums (on Canvas)

This policy will help you in potentially finding answers before I can get back to you, and it also helps me in not answering similar questions or concerns multiple times. Finally, by not overloading me with excessive e-mails, you'll help ensure that I'll have time to answer urgent or personal matters when they occur. I try to respond to all emails that students send to me and you may expect a response within one business day. However, expect emails with questions to which the answers are on the syllabus, schedule, or overall on Canvas (to include all discussion posts), to be replied to by referring you back to the syllabus, schedule, or Canvas, respectively. Please note that I am unable to provide technical assistance. If you need technical support, please contact the ASU Help Desk directly for assistance (<https://uto.asu.edu/contact> or see details below).

Email

In this course, email is reserved for communications of a personal nature or for scheduling a virtual office hours appointment. All email should be sent through Canvas so that I can immediately identify it as coming from a student in the class. Any email sent outside of Canvas is at risk of going to my spam box or getting a delayed response.

Campus Network/Canvas Outage

In the event that the campus network or Canvas are not available for an extended period of time (greater than five hours any time during 9 a.m. to 9 p.m.), the due dates of the affected assignments will be pushed back to the next day; if this is the case, I will publish an announcement with details about the extension—do not assume an extension was granted until you read it from me. You may follow campus network and/or Canvas outages through ASU's System Health twitter account (<https://twitter.com/asuoutages>).

Drop and Add Dates/Withdrawals

If you wish to withdraw from the course, please see [Drop/Add and Withdrawal](#) for full details on the types of withdrawals that are available and their procedures. You must consult with your advisor to add or drop this course. Please know that instructors do not have the ability to withdraw students from courses.

Deadlines for Drop/Add and Withdrawal are available on the [ASU academic calendar](#).

Grade Appeals

Per ASU policy, grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, the student may appeal to the assistant department chair for undergraduate programs per the [University Policy for Student Appeal Procedures](#) on Grades.

EXPECTATIONS

Expectations of Students

1. You should be actively involved in the learning process including using discussion boards.
2. Use proper etiquette on the discussion boards. Think carefully about what you want to say before you say it; once you have pressed the send button you can't get it back.
 - a. Be concise without being abrupt.
 - b. Do not make frivolous comments; we are all busy people.
 - c. Avoid writing in bullet points; the medium is richer if you employ good writing skills. (This does not preclude the use of bullets in appropriate circumstances).
 - d. Discussion board posts are not texts or tweets. Use proper writing and grammar.
 - e. Always encourage your fellow students and respect those around you.

3. The discussion boards are designed to be a safe place where students should feel free to ask questions, answer questions and discuss topics related to the course. Rude or unkind personal comments will result in the student posting such comments being referred to W. P. Carey administrators for appropriate action which may involve dismissal from the course.
4. Please check both “announcements” and the general discussion boards daily. Please check that answers to administrative questions are not already available before posting questions. Follow the “three before me” guideline of checking the following three sources before using Canvas to email me: (1) check the syllabus (2) check the course announcements (3) check the course discussion board and submit a post.
5. Students should read the assigned chapters in the textbook and the course materials posted on the course LMS site
6. Students should watch all videos available on the course LMS site.
7. Students should ask questions when they encounter material they do not understand. I will give you exams in this class and your exam score will tell me whether or not you understand the material. It is better to tell me yourself before the exam so that we can work together to help you understand than for your low exam score to be the tattletale.
8. Each homework in WebAssign will allow you multiple tries. You can use the first attempt as a practice attempt but there will also be practice questions available in Canvas.

Commitment to You

1. I will respond to all e-mails within 24 hours, Monday through Friday.
2. I will check the course site discussion board M-F before noon, again before 5PM and again before 10PM. I will also check the discussion board at least once over the weekend.
3. I will hold a live Zoom session 1-2 days before each exam.

ACADEMIC INTEGRITY AND ETHICAL BEHAVIOR

The W. P. Carey School takes academic integrity very seriously. Therefore, unless otherwise specified, it is imperative that you do your own work. Any suspected violations of academic integrity will be taken seriously and result in the following sanctions:

- A minimum of zero on the assignment **AND**
- A reduced grade in the course OR
- A failure in the course OR
- An XE which denotes failure due to academic dishonesty on the transcript OR
- Removal from the W. P. Carey School of Business

Additional information on ASU’s academic integrity policy may be found at <http://provost.asu.edu/academicintegrity>

W.P. CAREY SCHOOL OF BUSINESS HONOR CODE

Unethical behavior by corporations has been linked with negative performance outcomes; the same is true of unethical student behavior. It is expected that students will neither participate in nor condone activities such as cheating or plagiarism (<http://provost.asu.edu/academicintegrity>). You are expected

to do your own work on all individual exercises and the exams. We encourage you to speak to other students about the issues, but do not share work or answers. Failure to follow this policy may result in zero points for both the receiver and provider (if involved). Also, the instructor may take any other action described in the current academic dishonesty policy. By placing their names on assignments, students are affirming that the contents are their original work. Consulting work done by students in this course in other platforms or in previous years is a violation of academic integrity. This policy will be vigorously enforced. Sharing work you do in this course with others, whether in the course with you or not, can tempt others to violate this academic integrity policy and can result in that student's failure in the course and dismissal from his/her program.

All students are expected to abide by the honor code and the WPC Professionalism Policy. There is a copy of both on the course LMS and a link below.

Undergraduate Honor Code:

<https://students.wpcarey.asu.edu/resources/honor-code>

Professionalism Policy:

<https://students.wpcarey.asu.edu/resources/professionalism-policy>

OTHER UNIVERSITY POLICIES

- If you require an accommodation for a disability, you must be registered with the Disability Resource Center (DRC) and submit the appropriate documentation.
- Accommodations will be made for students with religious holidays. Below is the calendar of official religious holidays. Each holiday noted with two asterisks denotes an observance for which work is not allowed. For these holidays, students will not be penalized in any way for missing class or assignment. <https://provost.asu.edu/index.php?q=religious-holiday-calendar>
- Copying copyrighted materials without permission is a violation of the law and must be avoided. The course content, including lectures, are copyrighted material and students may not sell notes taken during the conduct of the course (see [ACD 304-06](#), "Commercial Note Taking Services" for more information).
- The university takes threatening behavior very seriously and these situations will be handled in accordance with the *Student Services Manual*, SSM 102-02 <http://www.asu.edu/aad/manuals/ssm/ssm104-02.html>.
- University-Sanctioned Activities
Accommodations will be made for students who miss class related to university-sanctioned activities according to ACD 304-02. If you are participating in a university-sanctioned activity, please let your instructor know as early in the course as possible so that accommodations can be made.
- Title IX: Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been

harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>.

- As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counseling>, is available if you wish to discuss any concerns confidentially and privately.

Technical Requirements and Support

Computer Requirements

This course requires a computer with internet access. Note: Tablets, Hybrid Devices (e.g. Microsoft Surface Pro) and mobile devices are not supported for the online exam proctoring system, nor are external cameras on a Mac. In addition, the following items are required:

1. Webcam and functioning microphone.
2. Web browsers (Chrome, Mozilla Firefox, Safari, or Microsoft Edge).
3. [Adobe Acrobat Reader](#).
4. [Adobe Flash Player](#).
5. Remote Proctor Now (RPNOW) system.

This course requires the use of the RPNOW online exam proctoring system and a webcam to help maintain academic integrity in the examinations -- this is a free service. Please review the [RPNOW system requirements](#). For information on the RPNOW system-check and to download and install the software, please refer to the "[Using RPNOW](#)" menu item on Canvas. There, you will also find guidance on taking an exam using RPNOW, including what to do if you see a password request.

6. Microsoft Excel. This is available for download from the MyASU apps page.

Technical Support

For 24/7 technical assistance, please contact the University Technology Office (UTO) Help Desk—please request a ticket number. Click the "Technical Support" link on the course Canvas page or call the help desk directly at 1-855-278-5080.

You should also look in the "Hallway Conversations Technical Issues" discussion forum for posts of a similar nature.

If you resolved a technical issue, please consider posting about it and how you solved it in the "Hallway Conversations Technical Issues" discussion forum—thank you!

Student Support - 360 Life Services

ASU Online students are encouraged to access 360 Life Services, which is a comprehensive support program that offers free, 24/7 counseling and crisis intervention in person or by phone. You can also chat at your convenience with topic specialists in legal, personal finance, childcare, education and more. This confidential resource supports your education, career and personal needs: <https://goto.asuonline.asu.edu/360lifeservices/>

ASU online students may access 360 Life Services,
<https://goto.asuonline.asu.edu/360lifeservices/>
<https://goto.asuonline.asu.edu/success/online-resources.html>

RPNOW INFORMATION

Requirements:

- You will need a camera, microphone, and a sufficient Internet connection.

Please go to [Using RPNOW](#) in your course site for more information on how to use and download RPNOW.

Complete W.P. Carey Honor Code Acknowledgement Using RPNOW:

You **must** complete the W.P. Carey Honor Code Acknowledgement using RPNOW in order to view content in this course. This ensures that you have acknowledged reading and will abide by the W.P. Carey Honor Code, and that the computer you are using will function properly with RPNOW.

Notifications:

- You may be contacted regarding any activities flagged during the exams you take as follows:
 - Your school or organization may contact you directly.
 - They may request that Remote Proctor contact you, in which case you'll receive an email from Remote Proctor.
- After your exam, be on the lookout for notifications. Final disposition of any violations will be determined by your school or organization. Please contact them with any questions or concerns you may have.

IMPORTANT INFORMATION REGARDING RPNOW:

- Students are required to establish identity following the procedures outlined in the RPNOW instructions.
- Students are responsible for self-testing the functionality of the system well in advance of all Remote Proctored exams in their courses, so that any troubleshooting that is required can be accomplished. Re-take the Honor Code quiz anytime to test functionality of RPNOW.

Test Environment Requirements:

The online testing environment should mimic the 'in class' testing environment, and must conform to the following:

Testing Area:

- Sit at a clean desk or clean table (not on a bed or couch).
- Lighting in the room must be bright enough to be considered "daylight" quality. Overhead lighting is preferred; however, if overhead is not possible, the source of light should not be behind the student.
- Be sure the desk or table is cleared of all other materials. This means the removal of all books, papers, notebooks, calculators, etc. unless specifically permitted in posted guidelines for that particular examination.
- No writing visible on desk or on walls
- The following should not be on your desk or used during your exam unless specifically allowed for that examination:
 - Word
 - PowerPoint
 - Textbooks
 - Websites
 - Calculators
 - Pen and/or Paper
- Close all other programs and/or windows on the testing computer prior to logging into the proctored test environment.
- Do not have a radio or the television playing in the background.
- Do not talk to anyone else. There can be no communicating with others by any means.
- No other persons except the test-taker should be permitted to enter the room during testing.

Behavior:

- Dress as if in a public setting.
- You must not leave the room during the testing period at any time, unless specifically permitted in posted guidelines for that particular examination.
- You must not take the computer into another room to finish testing. The exam must be completed in the same room the "Exam Environment View" is completed in.
- No use of headsets, ear plugs, or similar audio devices is permitted.
- Do not use a phone for any reason. The only exception is to contact support or your instructor in the event of a technical issue.