

MS 132 – Probability and Statistics

Fall 2020, 7-Week Session 1, Start Date 8/31/2020

Professor Information

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417-496-3380

Virtual from 10 am through 3:00 pm ET, Monday - Friday

And by Appointment

Required Text

Intro Stats, De Veaux, Pearson/Addison Wiley.

The book is in electronic form and includes access to the online assignment system, [MyMathLab](#). The course material for this class is linked to your registration and includes a fee to cover

to the e-book and homework assignment. Every student will have access from day one of the semester via Canvas.

Additional Required Readings: if applicable

Handouts and supplemental reading materials may periodically be distributed in class and/or made available on Canvas.

Course Description from catalog

This course is an introduction to the theory and application of probability and statistical analysis. Both descriptive and inferential techniques will be studied, with emphasis placed on statistical sampling and hypothesis testing. Also considered will be linear regression, contingency table analysis, and decision-making under uncertainty.

This course is also designed to help you become “data literate”. This simply means making sense of data. This is important because we continually encounter data on a daily basis. Becoming data literate means you have a basic understanding of how data is collected, analyzed, displayed and summarized. This type of understanding can help you make more informed judgements about data results by others and help you make conclusions and inferences about data you’ve collected.

Course Objectives

- Compute and interpret summary statistics;
- Graph quantitative and categorical data;
- Measure the correlation between two quantitative variables and fit a regression line;
- Define and apply the terms bias, randomization, confounding, blinding;

- Identify if research is observational or experimental in nature and state the scope of conclusions based on the study;
- Compute the probabilities of trial outcomes, complementary events, unions of events, and intersections of independent events;
- Compute, interpret, and evaluate hypotheses tests for one proportion and one mean;
- Compute, interpret, and evaluate confidence intervals for one proportion and one mean;
- Interpret hypothesis tests and confidence intervals for independent and paired samples;
- Interpret a chi-square test for association;
- Interpret ANOVA output;
- Interpret statistical inference in regards to linear regression;
- Given a set of data, assess which statistical tests

Prerequisites

Evaluation and Grading

Grading for this class is based on weighted averages for on-line and hand in assignments, quizzes, a project and exams. I use the standard Husson's grade scale.

Letter Grade	(Grade-Point Average)	Numeric Grade
A	4.0	95-100
A-	3.7	90- 94
B+	3.3	87- 89
B	3.0	83- 86
B-	2.7	80- 82
C+	2.3	77- 79
C	2.0	73- 76
C-	1.7	70- 72
D+	1.3	67-69
D	1.0	63- 66
D-	0.7	60- 62
F	0.0	Below 60

Online 1 on 1 meeting with Instructor

I will arrange to have a 1 on 1 meeting with each student within the first 3 weeks of class.

Grading Breakdown

Assignment	Percent of Total Grade
Homework	20%
Discussions	15%
Project	15%
Tests (3 total)	50%
Total	100%

Course Policies

Attendance Policy (derived from the Catalog)

Students are expected to attend all scheduled class sessions for courses in which they are enrolled. The only recognized absences are those that are the consequence of family or personal emergencies or extended illness requiring confinement or hospitalization. Proof of the validity of a particular class absence may be required of a student by an instructor. The decision as to whether or not a student may make up class work, quizzes or an examination missed while absent is exclusively that of the course instructor.

Husson University policy requires that faculty keep attendance records. When students are absent from either more than 15% of the scheduled class meetings for a semester or more than the number of absences allowed per the syllabus for a specific course, faculty may award the grade of X and deny course credit for excessive absences. It is recommended that faculty inform students when they are in danger of losing credit due to excessive absences.

Attendance in online courses is demonstrated in a variety of ways such as by submitting academic assignments, taking exams, engaging in interactive tutorials or computer-assisted instruction, participating in online discussions about academic matters, or initiating contact with the faculty members to ask questions about the academic content of the course.

Students must log in at least once a week at a minimum but multiple logins are highly recommended to satisfy academic obligations. Any students who begins active participation but does not log in to their course(s) for 7 consecutive calendar days, or as outlined in the course syllabus, may be assigned a grade of "X" (Failure for excessive absences).

Academic Honesty

Students and faculty in colleges and universities seek new knowledge and insights. There is so much to learn and know that we must build on the work of each other. Academic integrity is essential to that building process. We rely on each other, therefore, to specify what we know, how we know it, or where we found it. Underlying this reliance is an obligation to be honest, forthright, and civil in all dealings with fellow student, staff, and faculty. Behavior inconsistent with these obligations in the context of this course will not be tolerated.

Cheating, plagiarism, fabrication, falsification, collusion, and assaultive, demeaning or disruptive behavior are all examples of behavior that fall below the norms of academic integrity. [Optional: A student who engages in any such behavior will receive, at a minimum a grade of "F" in the pertinent assignment. The student may also have his or her final grade reduced by one or more grade points or be immediately dismissed with a failing grade from the course. Such behavior may also result in additional penalties, including suspension or dismissal from the student's program, School, or the University, and may delay or prevent professional licensure.]

If the instructor for this course determines that a violation of academic integrity has occurred, the instructor will record the finding in a report and meet with the student to discuss the findings and proposed sanctions. The student may appeal the findings to the Dean of [according to the course] within 10 business days of the scheduled meeting with the instructor. Uncontested sanctions or those supported by the Dean will become a matter of record on the student's file and be retained for the duration of the student's attendance at Husson.

Students with Disabilities

Husson University reasonably accommodates those who request accommodations and provide evidence of a disability. Such efforts are in accordance with the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 as amended. In order to request disability-related services at Husson students must self-identify to the Office of Academic Success and Intercultural Services (OASIS), and provide appropriate and up-to-date documentation to verify their disability or special needs. Notice to other departments, faculty or staff, does not constitute self-identification to OASIS.

After the accommodations have been approved, the student must notify the instructor by providing the accommodation plan. Depending upon the nature of the request, the instructor may then coordinate with OASIS to fulfill the plan. If you have any questions regarding reasonable accommodations or need to request disability-related services, please contact Dean Wilson Barker in the OASIS Office, located in Peabody Hall room 208, or call (207) 992-1934, or e-mail wilsonbarkers@husson.edu.

Sexual Assault / Misconduct

Administration, faculty and staff at Husson University are interested in the intellectual, physical, and emotional well-being of its students. At the University faculty members are considered "responsible employees" under the regulations of Title IX and are therefore required to report incidences of sexual assault and/or misconduct. This reporting obligation pertains to incidents that have been observed as well as those that have been heard. Because advisors, faculty, and staff must report such matters, the ability of these individuals to maintain the confidentiality of information provided is limited. Confidentiality can be maintained through Husson University Counseling Center. The Husson University community encourages students to advance a culture of safety and concern for others.

For further information regarding resources available to students and policies regarding sexual misconduct, please visit: <http://www.husson.edu/title-ix>

Non-Discrimination

Husson University is committed to maintaining an environment that is free of unlawful harassment and discrimination. In accordance with federal law and its commitment to a fair and open campus environment, Husson cannot and will not tolerate unlawful discrimination against or harassment of any individual or group based upon race, color, religion, national origin, sex, sexual orientation, age, disability, citizenship, veteran status, or any factor that is a prohibited consideration under applicable law, in matters of admissions, employment, housing, or services or in the educational programs or activities it operates.

Religious observance policy

Husson University recognizes that the student body includes adherents of many faiths, and that observance of religious holidays is an important part of religious practice. In support of this sentiment, any student who is unable to attend classes or to participate in any examination, study, or course requirements on a day of observance because of his or her religious belief, shall be provided with an opportunity to make up the course requirements so long as the effort to do so does not create an unreasonable burden upon the instructor, department or the University. The student must provide advanced notice as established in the syllabus such that the instructor has adequate opportunity to prepare for a makeup. At the discretion of the instructor, the occasion for making up coursework could occur prior to the examination or due date of the assignment. No adverse or prejudicial effects shall result to a student's grade for the examination, study, or course requirement on the day of religious observance because he or she relies upon these provisions. In the case of an internship or clinical, students should refer to the applicable policy in place by the employer or site.

Instructors Discretion to Modify the Syllabus

The instructor has the authority to modify the syllabus based on (her/his) determination that such changes would better meet the learning objectives of the course. It is the responsibility of the student to maintain awareness of those modifications and note them as necessary.

Husson Resources

The Office of Academic Success & Intercultural Services—**OASIS**—in 208 Peabody Hall offers an integrated academic services center, which includes the following departments:

Academic Services

The Academic Services staff members serve as advisors to students who have not yet declared a major area of study (Undeclared) and provide advice and guidance on academic requirements to all students. They offer assistance with study skills and time management, as well as coordinating appointments with tutors in the Learning Center and Writing Center. Academic Services staff can advise students every step of the way from declaring a major, to registering for classes, to preparing to graduate.

Career Services

Husson Career Services helps students and alumni make informed career decisions, connect with employers, pursue further education, and develop their professional lives and goals. They provide guidance on careers, majors, internships, job searching, graduate school advising, using social media, and much more. Get started by signing up on the Husson Eagle Career Link through the College Central Network where jobs, internships, and all Career Services events are posted.

Disability Services

Disability Services staff work with students who have all types of disabilities to make sure they have equal access to a Husson education. To receive accommodations, a student must provide

documentation of a qualifying disability and initiate contact with Disability Services. The reasonable accommodations determined by the Disability Services office cannot substantially alter the course or program requirements. For out-of-classroom experiences, accommodations are reevaluated and do not necessarily match classroom accommodations.

International Student Services

International students will find a full range of support and advocacy services within OASIS. A designated Student Success Advisor will assist international students in academic as well as personal advising, as well as facilitating contact with the Learning or Writing Centers. Additionally, international students can access Immigration and Visa Services, orientation programming, peer mentors, and Career Services through their Student Success Advisor.

Learning Center

The Learning Center is a student-central resource dedicated to providing tutoring for both general undergraduate classes and degree-specific courses. The atmosphere is laid-back, with both peer tutors and faculty tutors available to help. Classes tutored include: anatomy and physiology, chemistry, algebra, probability and statistics, physics, psychology, and Spanish. Classes are added to the tutoring schedule as need dictates. Supplemental Instruction is also offered in many science classes, again as dictated by student need.

Writing Center

The Writing Center is geared towards all things writing: composition, the creative process, grammar and even style. Writing consultants can help with inventing, organizing, and revising documents to meet the specific requirements established by courses. Throughout the term, the Writing Center also conducts informational workshops, such as how to use APA citation format. Information regarding these workshops is posted outside the Writing Center.

Online Tutoring

If you are enrolled in one of Husson University's extension campuses or online courses and need to access a tutor, please use the appropriate link below to set up an appointment.

For an appointment with a Writing Consultant, please email:

writingcenter@husson.edu

For an appointment with a tutor in the Learning Center, please email:

learningcenter@husson.edu

General Education

This course is part of the General Education program at Husson University. Participation in General Education is required of all students because of the lifelong lessons and appreciation developed through these courses. In addition, the greater academic community promotes, and employers value, the learning outcomes and skills obtained from General Education. Instructors and advisors throughout Husson University collaborate to foster an understanding and appreciation of General Education.

Module 1: Exploring Data, 8/31 – 9/6

First Day of Class 8/31/20

Add/Drop 8/31 – 9/4

Readings:

- **Chapters 1-3, Sections 4.1-4.3, Chapter 6**

Assignments:

- **Introductory Discussion**
- **Discussion 1 on Canvas**
- **Module 1 Homework on MyLabs Statistics**

Module 2: Probability and Distribution, 8/7 – 9/13

Readings:

- **Chapters 5, 9, 12 and 13**

Assignments:

- **Discussion 2 on Canvas,**
- **Module 2 Homework on MyLabs Statistics**
- **Project Part A Discussion,**

Module 3: Linear Regression and Gathering Data, 9/14 – 9/20

Readings:

- **Chapters 7 and 8.**
- **Chapters 10 and 11 (for Project 1 and Discussion 3)**

Assignments:

- **Discussion 3 on Canvas,**
- **Module 3 Homework 3 on MyLabs Statistics,**
- **Test 1 (Covers Week 1 and 2)**

Module 4: Inference for Single Proportions, 9/21 – 9/27

Readings:

- *Sections 15.1 and 15.2*
- *Chapters 16 and 17*

Assignments:

- *Discussion 4 on Canvas and*
- *Module 4 Homework on MyLabs Statistics,*
- *Project Part B Assignment*

Module 5: Inference for Single Means, 9/28 – 10/4

Readings:

- *Sections 15.3, 15.4, and 15.5*
- *Chapters 18 and 19*

Assignments:

- *Discussion 5 on Canvas,*
- *Module 5 Homework on MyLabs Statistics,*
- *Project Part C Discussion*

Module 6: Comparing Groups and Blocking, 10/5 – 10/11

Readings:

- *Chapters 20 and 21*
- *Sections 22.1, 22.2, and 22.3*

Assignments:

- *Discussion 6 on Canvas,*
- *Homework 6 on MyLabsPlus,*
- *Test 2 (Covers Week 3, 4, 5)*

Module 7: Accessing Associations Between Variables, 10/12 – 10/11; 10/12 – 10/23

Last Day of Class 10/23

Readings:

- **Section 22.4, 23.1, 23.2, and 23.3**

Assignments:

- **Discussion 7 on Canvas,**
- **Homework 7 on MyLabsPlus,**
- **Project Part D Assignment**
- **Test 3 (Covers Week 6 and 7)**