



## **HPEM 5317 Health Business Statistics**

**Credit Hours: 3**

**Semester:** Fall 2023

**Year:** 2023

**Class Days/Times:** Tuesday 6:30-9:30 Synchronous, as scheduled

**Location:** Online

**Instructors of Record:** Jessica Escareno Alvarado, PhD, MPH

**Office:** H243 **Office Phone:** (903) 877-7397

**E-Mail:** Jessica.escareno@uttyler.edu (Preferred contact method)

**Office Hours:** By appointment only

**Instructors of Record:** Michael H. Kennedy, PhD, MHA, FACHE

**Office:** H241 **Office Phone:** (903) 877-1402

**E-Mail:** michael.kennedy@uttyler.edu (Preferred contact method)

**Office Hours:** By appointment only

**Course Description:** This course presents basic statistical concepts and methods commonly used to make evidence-based decisions in business settings, with a focus on healthcare applications. This course will cover commonly used statistical tools needed by healthcare executives. During the course, techniques to collect, summarize, analyze, and interpret business related data will be reviewed. Topics in this course may include defining and formulating problems, formulating, and testing hypotheses, sampling methods and sampling distributions, creating descriptive statistics, statistical inference, and using the results to make decisions.

**Prerequisite:** None.

**Co-requisite:** None

**Student Learning Outcomes (SLO or "course objective"):** Upon successfully completing this course, the student will be able to:

- use descriptive statistics to summarize data. PLO 1.5 and PLO 1.9
- use statistical tests, Chi-square, t-tests, ANOVA, and regression to discover relationships between variables. PLO 1.5
- recognize the appropriate statistical test for the data available and goal of the research. PLO 1.5
- develop competency in running statistical software. PLO 1.5
- demonstrate information literacy. PLO 1.1 and 1.2
- identify critical variables, build models, select, and run appropriate statistical tests, interpret results, and communicate findings. PLOs 1.5 and 1.10
- write and present a case analysis. PLOs 1.1, 1.2, 1.3, 1.5, 1.9, and 2.1

**Linked MHA Program Learning Outcomes (PLOs):** The SLOs address the following MHA Program PLOs:

- PLO 1.1 - Identify appropriate sources and gather information, effectively and efficiently.
- PLO 1.2 - The student will appraise literature and data critically that enhances community health.
- PLO 1.3 - Develop, understand, and use data from performance, surveillance or monitoring systems.
- PLO 1.5 - Statistical analysis: Understand and apply basic statistical methods relevant to public health and health administration practice.
- PLO 1.9 – Population health assessment: Understand and apply basic epidemiological principles, measures and methods to assess the health status of a population; identify risk factors in individuals and communities; evaluate the impact of population-based interventions and initiatives.
- PLO 1.10 - Decision making: Implement a decision-making process that incorporates evidence from a broad analysis that includes uncertainty, risk, stakeholders, and organizational values.
- PLO 2.1 - Convey: Speak and write in a clear, logical, and grammatical manner in formal and informal situations; prepare cogent business presentations; facilitate an effective group process.



## Required Textbooks:

1. Kros, J. F., & Rosenthal, D. A. (2016). Statistics for health care management and administration: Working with Excel (3rd ed.). San Francisco, CA: Jossey-Bass. [K&R]
2. Bihl, T. (2017). Biostatistics using JMP®: A practical guide. Cary, NC: SAS Institute, Inc. [Bihl]

Other readings as assigned.

## Special Course Notes:

- Proctoring Notice: The exams in this course will be proctored using ProctorU. You will need to have a webcam and microphone. If you are not able to provide these items, you must contact me by September 26<sup>th</sup> so we can arrange for you to take your exam on campus or via Zoom.
- This course is fully online. Students are expected to have access to a reliable, high speed internet connection and a computer capable of accessing Canvas and the Virtual Computer Lab (through VMware). Microsoft Excel and JMP Pro (available by free download or through the Virtual Computing Lab) will be used in class. Technical specifications will be listed in Canvas.

**Course Assessment/Methods of Evaluation:** Methods of assessing student performance in the course include Test Your Knowledge assignments, a discussion board post, two examinations and a small-group case analysis and presentation.

- Test Your Knowledge (TYK) Assignments – TYK assignments will periodically assess your grasp of course content. They may consist of problem sets, short assignments or quizzes based on in-class or asynchronous presentations. Emailed assignments will not be accepted. Late work will not be accepted, but the lowest TYK grade will be dropped.
- Discussion Board Post - Developing Analytical Context. Students will be asked to provide an original discussion board post to contribute to course context. Topics may include statistical pioneers, an overview of data sets applicable to health and human services, or contemporary issues in data analytics.
- Examinations. Two examinations will test content knowledge and application. Exams will be divided into parts.
- Case Analysis and Presentation. Students will work in small groups to present the analysis of a data set related to health and human services.
- Extra Credit Assignments: Throughout the semester, extra credit opportunities will be available.

Assessment	Grading Scale	Percentage
Test Your Knowledge Assignments	0-100	18%
Discussion Board	0-100	2%
Exam 1	0-100	25%
Exam 2	0-100	25%
Case Analysis and Presentation	0-100	30%
Total		100%

**Course Grade Scale (points): A: 90 – 100%, B: 80 – 89%, C: 70 – 79%, F: < 70%**



## Other Class Policies:

**Communications:** Students are responsible for monitoring Canvas Announcements, postings to the Canvas Inbox, and email on a frequent basis. The Patriot account should be used as the primary email account.

**Attendance:** Regular and punctual attendance at synchronous Zoom class sessions is encouraged. If a student misses a class, the student is responsible for obtaining any information distributed during those times. Synchronous Zoom class sessions will be recorded and posted to Canvas.

**Participation:** Attendance and participation in class is important. Students will be frequently asked to review concepts and online presentations prior to the scheduled class, so that class time can be used for hands-on activities and work on assignments. Students will often be building Excel and JMP Pro models with the Instructor.

**Academic Honesty:** Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

### Cheating

Dishonesty of any kind involving examinations, assignments, alteration of records, wrongful possession of examinations, and unpermitted submission of duplicate papers for multiple classes or unauthorized use of keys to examinations is considered cheating. Cheating includes but is not limited to:

- Using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class.
- Falsifying or inventing any information, including citations, on an assigned exercise.
- Helping or attempting to help another in an act of cheating or plagiarism.

### Plagiarism

Plagiarism is presenting the words or ideas of another person as if they were your own. Materials, even ideas, borrowed from others necessitate full and complete acknowledgment of the original authors. Offering the work of another as one's own is plagiarism and is unacceptable in the academic community. A lack of adequate recognition constitutes plagiarism, whether it utilizes a few sentences, whole paragraphs, articles, books, audio-visual materials, or even the writing of a fellow student. In addition, the presentation of material gathered, assembled, or formatted by others as one's own is also plagiarism. Because the university takes such misconduct very seriously, the student is urged to carefully read university policies on Misconduct in Research and Other Scholarly Activity 05.00. Examples of plagiarism are:

- Submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another.
- Submitting a work that has been purchased or otherwise obtained from an Internet source or another source.
- Incorporating the words or ideas of an author into one's paper without giving the author due credit. 8

### Adding/Dropping:

The official deadline for adding and dropping courses is as published in the academic calendar and Graduate Bulletin (typically the day before Census Day). However, students are strongly encouraged to meet with their graduate advisor or the Program Coordinator prior to adding/dropping courses. Movement into and out of classes after the 4th class day requires approval of the Program Director. Students can drop until mid-semester without a WP or WF. Drops after mid-semester require approval of the Dean. Each student is responsible for their own enrollment status with the university.



**Disability Accommodations:**

UTHSCT abides by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, which mandate reasonable accommodations be provided for students with documented disabilities. If you have a disability and may require some type of instructional and/or examination accommodations, please contact me early in the semester so that I can provide or facilitate provision of accommodations you may need. If you have not already done so, you will need to register with the Student Services Office (located on the UT Tyler Campus). You may call 903-566-7079 for more information.

**Note: The Instructor retains the right to change this syllabus.**

## Course Calendar

Module #	Dates	Asynchronous/Synchronous	Assigned Readings	Assignments
1	August 22	Synchronous 7:45-9:30 pm	K&R: Chapter 1	Discussion Board (DB): Intros
2	August 29	Asynchronous	K&R: Chapter 2,3,4	TYK 1
3	September 5	Synchronous 6:30-9:30 pm	K&R: Chapter 5	TYK 2
4	September 12	Asynchronous	K&R: Chapter 5,6 Bihl: Chapter 4	TYK 3
5	September 19	Synchronous 6:30-9:30 pm	K&R: Chapter 6 Bihl: Chapter 4	JMP Extra Credit DB: Setting Analytical Context
6	September 26	Asynchronous	K&R: Chapter 7 Bihl: Chapter 7	TYK 4
7	October 3	Synchronous 6:30-9:30 pm	<b>Exam 1</b>	
8	October 10	Asynchronous	K&R: Chapter 9 Bihl: Chapter 7	TYK 5
9	October 17	Synchronous TBD	K&R: Chapter 11,12 Bihl: Chapter 9	TYK 6
10	October 24	Asynchronous	K&R: Chapter 13 Bihl: Chapters 9 & 10	TYK 7
11	October 31	Synchronous 6:30-9:30 pm	K&R: Chapter 10 Bihl: Chapter 8 and 10	TYK 8
12	November 7	Asynchronous	K&R: Chapter 8 Bihl: Chapter 7	TYK 9
13	November 14	Synchronous TBD	<b>Case analysis paper and presentations</b>	
	November 21		<b>Holiday</b>	
14	November 28	Asynchronous	Bihl: Chapter 13	TYK 10
15	December 5	Final exam	<b>Exam 2</b>	
	December 12	Grades due		