

University of Florida
College of Public Health & Health Professions Syllabus
HSA 6395, section 2181: Healthcare Data Analytics I (3 credit hours)

Fall: 2016

Delivery Format: On-Campus

Course Website available in Canvas

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Preferred Course Communications: Message in Canvas

PURPOSE AND OUTCOME

Course Overview

This course is intended to provide an introduction to statistical analysis for Health Administration for MHA students. It is intended to acquaint (*or re-acquaint*) you with the basic concepts and procedures used in analyzing healthcare data. You will be introduced to the use of data analytics to facilitate decision-making tasks involved in the management of healthcare delivery processes. In addition, topics covered in this course will provide a foundation for the analytic approaches that are highlighted in HSA 6196 (Healthcare Data Analytics II), HSA 6198 (Information Management in Health Administration) and HSA 6385 (Performance Management for Health Care Managers).

Course Objectives and/or Goals

This course is designed to instruct students on the following:

Course Objectives	Competencies Addressed
Describe the basic terminology and concepts of univariate, bivariate, and multivariate statistics	Continually scan and interpret key trends and activities in the health care environment
Utilize Microsoft Excel to aid in analysis, description, and presentation of statistical data and results	Measure and improve clinical and organizational performance and as needed redesign organizational systems and processes
Discuss appropriate ways to read, produce, present, and interpret data analytic reports	Use statistical and analytical tools to measure and improve organizational performance.
Determine an appropriate technique for a given set of variables and questions	Identify and effectively use appropriate communication vehicles based on audience characteristics and communication goals
Explain the differences among various analytical techniques	
Propose answers to strategic or operational questions using basic analytic techniques	
Specify examples of how quantitative methods can be applied in health services	

Instructional Methods

- Lecture
- Out of class homework assignments
- Student team run review sessions
- Team presentations
- In-class discussions

Disclaimer: ***This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.***

DESCRIPTION OF COURSE CONTENT

Course Materials and Technology

Required Materials:

- *Statistics for Health Care Management and Administration: Working with Excel, 3rd Edition.* John F. Kros, & David A. Rosenthal; Jossey-Bass, 2016.
- *Healthcare Analytics for Quality and Performance Improvement.* Trevor L. Strome; John Wiley & Sons, Inc., 2013.
- Course reading distributed by instructor
- A computer with Excel capabilities (version 2010 or later)

Optional Materials:

A Practical Approach to Analyzing Healthcare Data, 3rd Edition. Susan White; American Health Information Management Association, 2016.

For technical support for this class, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

Topical Outline/Course Schedule (*Red = Student Team Run Presentation)

Date	Topic	Reading	Assignment
Aug. 23rd	Classes Begin - Welcome and introduction to the class	K&R Ch. 1	
Aug. 25th	Excel	K&R Ch. 2	Exercises 1.4.4, 2.1.2, 2.1.2, 2.2.2, 2.3.1, 2.3.3, 2.4.2, 2.5.2, 2.8.1, 2.8.2, 2.8.3 (Due Aug. 29)
Aug. 30th	*Exercises Review Primary: Group 1, Secondary: Group 7		
Sept. 1st	Data Acquisition	K&R Ch. 3	Exercises 3.1.1, 3.1.2, 3.2.1a, 3.2.2a, 3.3.1, 3.3.2 (Due Sept. 5)
Sept. 6th	*Exercises Review Primary: Group 2, Secondary: Group 6		
Sept. 8th	Data Display	K&R Ch. 4	Exercises 4.1.2, 4.1.5, 4.2.2, 4.3.2, 4.3.3 (Due Sept. 12)
Sept. 13th	*Exercises Review Primary: Group 3, Secondary: Group 5		
Sept. 15th	Measures of Central Tendency and Dispersion	K&R Ch. 6	Exercises 6.1.2, 6.2.8, 6.3.1, 6.4.3, 6.5.2, 6.6.2, 6.6.4 (Due Sept. 19)
Sept. 20th	*Exercises Review Primary: Group 4, Secondary: Group 2		

Date	Topic	Reading	Assignment
Sept. 22nd	Confidence Limits and Hypothesis Testing	K&R Ch. 7	Exercises 7.1.2, 7.1.5, 7.1.6, 7.3.2, 7.4.4, 7.4.6, 7.5.2, 7.5.3 (Due Sept. 26)
Sept. 27th	*Exercises Review Primary: Group 5, Secondary: Group 3		
Sept. 29th	Statistical Tests for Categorical Data	K&R Ch. 8	Exercises 8.1.3, 8.2.5, 8.3.2 (Due Oct. 3)
Oct. 4th	*Exercises Review Primary: Group 6, Secondary: Group 4		
Oct. 6th	T-Tests for Related and Unrelated Data	K&R Ch. 9	Exercises 9.1.1, 9.1.3, 9.2.1, 9.2.5, 9.3.3a (Due Oct. 10)
Oct. 11th	*Exercises Review Primary: Group 7, Secondary: Group 5		
Oct. 13th	Analysis of Variance	K&R Ch. 10	Exercises 10.1.3a, 10.1.4a, 10.3.3-part 1 (Due Oct. 17)
Oct. 18th	*Exercises Review Primary: Group 1, Secondary: Group 6		
Oct. 20th	FHA Meeting – No Class		
Oct. 25th	Linear Regression	K&R Ch. 11	Exercises 11.1.1a, 11.1.1b, 11.1.7, 11.3.2a (Due Oct. 31)
Oct. 27th	Exploratory Data Applications	White Ch. 8	Quiz (Due Nov. 3)
Nov. 1st	*Exercises Review Primary: Group 2, Secondary: Group 7		
Nov. 3rd	Guest Lecture – David Guzick, MD, PhD, Senior Vice President for Health Affairs-UF, President-UF Health		
Nov. 8th	*Toward Healthcare Improvement Using Analytics, Fundamentals of Healthcare Analytics Primary: Group 3, Secondary: Group 1	Strome Ch. 1 & 2	
Nov. 10th	*Developing an Analytics Strategy to Drive Change Primary: Group 4, Secondary: Group 2	Strome Ch. 3	
Nov. 15th	*Defining Healthcare Quality and Value Primary: Group 5, Secondary: Group 3	Strome Ch. 4	
Nov. 17th	*Data Quality and Governance Primary: Group 6, Secondary: Group 4	Strome Ch. 5	
Nov. 22nd	*Developing and Using Effective Indicators Primary: Group 7, Secondary: Group 5	Strome Ch. 7	
Nov. 24th	THANKSGIVING HOLIDAY		
Nov. 29th	*Leveraging Analytics in Quality Improvement Activities Primary: Group 1, Secondary: Group 6	Strome Ch. 8	
Dec. 1st	*Usability and Presentation of Information Primary: Group 2, Secondary: Group 7	Strome Ch. 10	
Dec. 6th	*Advanced Analytics in Healthcare, Becoming an Analytical Healthcare Organization Primary: Group 3, Secondary: Group 1	Strome Ch. 11, 12	
Dec. 8th	READING DAY		
Dec. 13th	FINAL EXAM WEEK		

ACADEMIC REQUIREMENTS AND GRADING

Assignments

All assignments should be submitted on time and by midnight on the day they are due.

Grading

Assignments and assessments are opportunities for you to demonstrate understanding of the principles and procedures covered in class. Grades will be based on the following criteria:

Requirement	% of final grade
Textbook assignments and quizzes	50%
Student Team Run Review Sessions	20%
Team Presentations on Healthcare Analytics	20%
Participation, including CATME Peer Evaluations	10%

Point system used (i.e., how do course points translate into letter grades).

Points earned	95 or more	90 - 94	87- 89	83 - 86	80 - 82	77 - 79	73 - 76	70 - 72	67 - 69	63 - 66	60 - 62	Below 60
Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E

Please be aware that a C- is not an acceptable grade for graduate students. A grade of C counts toward a graduate degree only if an equal number of credits in courses numbered 5000 or higher have been earned with an A. In addition, the Bachelor of Health Science Program does not use C- grades.

You must include the letter grade to grade point conversion table below. Letter grade to grade point conversions are fixed by UF and cannot be changed.

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	WF	I	NG	S-U
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0	0.0	0.0	0.0	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at:

<http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Policy Related to Late and Make up Work

Students are expected to complete all assignments by appropriate dates. 10% penalty for late submission, additional 10% penalty for every 24 hours.

Please note: Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail me within 24 hours of the technical difficulty if you wish to request a make-up.

Make-up options will be offered to students only under extenuating circumstances and through communication with the instructor. The instructor reserves the right to determine appropriate make-up options for each student.

Policy Related to Required Class Attendance

Students are expected to read the assigned text, complete all out of class assignments, be an active member of their group, and to actively participate in class discussions. Personal issues with respect to class

participation or fulfillment of course requirements will be handled on an individual basis and must be communicated with the instructor with reasonable advance notice.

All faculty are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

Expectations Regarding Course Behavior

Students are expected to:

- Attend all classes
- Complete reading and homework assignments prior to class
- Participate in class discussions
- Be an active member of your group
- Exhibit professional behavior
- Limit use of electronic devices strictly to activities in support of learning environment.

Communication Guidelines

Students will be expected to communicate via the Canvas messaging system.

Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at

<https://evaluations.ufl.edu/results/>.

SUPPORT SERVICES

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. The Dean of Students Office will provide documentation of accommodations to you, which you then give to me as the instructor of the course to receive accommodations. Please make sure you provide this letter to me by the end of the second week of the course. The College is committed to providing reasonable accommodations to assist students in their coursework.

Counseling and Student Health

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:
Alachua County Crisis Center
(352) 264-6789
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

Inclusive Learning Environment

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: www.multicultural.ufl.edu