

University of Florida
College of Public Health & Health Professions
HAS 6395: Healthcare Data Analytics I (3 credit hours)
Fall 2014
Tuesdays 1-4 pm, HPNP G301A

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Preferred Course Communications (e.g. email, office phone): Please direct questions to the Teaching Assistant (Secbauer@ufl.edu).

Prerequisites

It is the first in a two course series in the Masters of Health Administration degree program.

PURPOSE AND OUTCOME

Topics covered in this course will provide a foundation for the analytic approaches that are highlighted in HSA Healthcare Data Analytics II, Information Management in Health Administration and Performance Management for Health Care Managers.

Course Overview

Health care organizations produce enormous amounts of data on their patients, their communities, the costs of care, supplies, staffing, quality of care, and procedures. Health care administrators are challenged with developing insights from these data in order to improve patient care, develop population health strategies, and maximize business efficiencies. Decision support tools are available to managers. They need to know how to use them and how to interpret the information that comes from them. Healthcare can and should learn from the best analytics of other industries but understand how to adapt them to the uniqueness of the healthcare environment. This course is an introduction to the use of data analytics in health care decision-making.

Course Objectives and/or Goals

There are two components to the course. Part 1 will define healthcare intelligence and data analytics. Part 2 will focus on the quantitative methods that can be applied to analyze health care data. Students will become adept at using EXCEL to manipulate data and perform analyses.

Instructional Methods

The concepts of the course will be taught through a variety of modalities. There will be extensive use of case studies for real world applications. Textbook chapters will be presented for understanding concepts. Group projects will be assigned for team building, collaboration and opportunities for problem solving. Finally, group presentations will be utilized to develop organization and speaking skills.

What is expected of you?

This class is a graduate course and as such will be taught much more as a seminar. You are expected to participate in class and do outside reading. Class participation and presentations account for a large portion of the grade because in the professional world this is how you will be evaluated.

You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively

participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

DESCRIPTION OF COURSE CONTENT

Topical Outline/Course Schedule

Schedule of topics covered. Subject to changes as need arises.

Week	Date(s)	Topic(s)	Readings
1	8/26	Introduction, Syllabus and overview	Mainous, 2011; Fact Sheet Newborns and Mothers Health Protection Act
2	9/2	Basic Analytics and Statistics	2010 NAMCS Web Tables; Pneumonia and Allergic Rhinitis ECR Summary
3	9/9	Basic Analytics and Statistics	Physician Quality Reporting System; Big Data JAMA, 2014; Big Data NEJM, 2014; Lynda Tutorials
4	9/16	Providing value to the organization through data analytics	US Preventive Services Task Force; Lynda Tutorials
5	9/23	What constitutes data and how to organize it? SKILLS Workshop: Introduction to EXCEL	Hospital Managers and Quality Analysis; Big data for high cost patients; Attractiveness of Doctor; Physician Variation in Prostate; Lynda Tutorials
6	9/30	Data warehousing and information architecture SKILLS Workshop: Introduction to EXCEL	
7	10/7	Information integration and asking an intelligent question	
8	10/14	Class presentations and case studies	
9	10/21	Inferential statistical approaches to business analytics- QUICK PROJECTS	Diabetes projection Mainous and Ruwaard
10	10/28	Data Mining and Big Data approaches	
11	11/4	Measurement issues and summarizing and interpreting results	MECS Overview
12	11/11	Class presentations and case studies	UF Health Tip Sheet, Surgical Risk Scores
13	11/18	Class presentations and case studies	Smarter Pay for Performance
14	12/2	Introduction to SQL and SAS	
15	12/9	Final Exam	

Course Materials and Technology

Please visit the Canvas learning site for all reading materials and lecture presentations.

Required Material:

1. Business Intelligence: Practices, Technologies, and Management. Rajiv Sabherwal & Irma Becerra-Fernandez; John Wiley & Sons, Inc., 2011
2. Health Analytics: Gaining the Insights to Transform Health Care. Jason Burke; John Wiley & Sons, Inc., 2013
3. Course readings distributed by instructor

Optional Material:

1. Business Analytics for Managers: Taking Business Intelligence Beyond Reporting. Gert H.N. Laursen & Jesper Thorlund; John Wiley & Sons, Inc., 2010

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>

ACADEMIC REQUIREMENTS AND GRADING

Assignments

Class Participation (20%) Everyone will be expected to participate in class discussions.

Exam (30%) There will be a final exam.

Presentations (30%) Small groups will be assigned a variety of cases and scenarios and will work together to solve the problem and present it to the class. Each student will participate in multiple groups throughout the semester with members chosen by the instructor.

Written Analysis (20%) A written analysis for the case will be prepared that will accompany the oral presentation. Late papers and email submissions will not be accepted.

Assignments linked to course objectives and competencies.

Assignment	Course Objectives	Competencies
Final Exam	Describe the basic terminology and definitions of business intelligence and data analytics Describe the principles of business intelligence including data warehousing, data mining and how to create a data driven organization	HEC-0, HEC-1, HEC-2
Group Project Presentation	Understand how to read, produce, and present data analytic reports	LP-1, LP-2, LP-3, HOP-1
Group Project Paper	Define a strategic or operational question that can be analyzed using basic measurement tools Discover how to answer strategic or operational questions using basic analytic techniques Learn a defined process for analyzing a set of health care related data Understand how to read, produce, and present data analytic reports	LP-1, LP-2, LP-3, HOP-1, BAT-0, BAT-3

Grading

Requirement	Due date	% of final grade
Group Project Presentation	December 9	30%
Group Project Paper	December 9	20%
Final Exam	December 2	30%
<i>Class Participation</i>		20%

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

Points earned	95+	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. In addition, 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.

Letter grade to grade point conversion table below.

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 Make up Exams or Other Work

Late papers and email submissions will not be accepted.

Policy Related to Required Class Attendance

Students are expected to view all the lectures, read the assigned text and articles, 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.

As a professional level course, students are expected to conduct themselves in the same manner that they would conduct themselves in a professional employment setting. Late assignments or missed exams will not be accepted without prior communication to the instructor or valid documented absences consistent with university policies

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

This class is a graduate course and as such will be taught much more as a seminar. You are expected to participate in class and do outside reading. Class participation and presentations account for a large portion of the grade because in the professional world this is how you will be evaluated.

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.
