

**University of Florida**  
**College of Public Health & Health Professions**  
**HSA 6196: Healthcare Data Analytics II (3 Credits)**

Semester: Spring 2025

Delivery Format: Online

Schedule: Thursday 4:00 PM – 6:00 PM (Live Session on Alternating Week)

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**Instructor Names:** Andrew S. Cistola, Ph.D., MPH (“Drew”); Ruixuan Wang, MPP (“Roxanne”)

**Phone Number:** (352) 358-1389 (mobile for Drew)

**Email Address:** [andrewcistola@ufl.edu](mailto:andrewcistola@ufl.edu) [ruixuan.wang@phhp.ufl.edu](mailto:ruixuan.wang@phhp.ufl.edu)

**Office Hours:**

Drew: Thursday 4:00 PM – 6:00 PM (Alternating weeks with live session) and by appointment.

Roxanne: After the live session and by appointment.

**Preferred Course Communications:** Canvas inbox is best for quick course related chats. @ufl.edu email address is best for more in-depth topics or extra course communication. Mobile phone is available for text or call when urgency or convenience is needed.

**Pre-Requisites**

Enrollment in UF MHA or MPH program. Basic familiarity with statistics and experience working with data in Microsoft Excel. Professional experience in healthcare is recommended but not required.

If a student feels that they would be qualified to take the course (but have not explicitly met the above conditions), they are encouraged to email the instructor with a CV/resume and brief explanation to secure permission of instructor to take the course.

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**PURPOSE AND OUTCOME**

**Course Overview**

The purpose of this course is to provide future healthcare professionals with the skills they need to analyze data and provide meaningful recommendations to stakeholders. This will be achieved by giving students practical experience in conducting data analysis that reflects the kind of work they should expect to see in their careers. In addition, students will have opportunities for iterative feedback that help them refine these skills as well as exposure to industry professionals who can impart contextual knowledge from their own experience working in data analytics.

**Intended Audience**

This course is designed for professional master’s students in the field of public health or health administration. This course is not intended to be a computational skills or statistical methods course. Rather, this is designed to prepare students with practical skills to work as data analysts or work with data analysts in a variety of healthcare settings.

**Learning Objectives**

By the end of the course, students will be able to:

1. Understand best practices in conducting an analytics project in a healthcare setting.
2. Implement a data analytics project that includes proper documentation and quality assurance processes within a specified timeframe.

3. Deliver a succinct and relevant finding based on a data analysis that addresses a common stakeholder need in health administration.
4. Evaluate a completed data analysis and provide feedback on improvement.
5. Describe current software tools and quantitative methods used in health data analytics.

### **Relation to Program Outcome**

These objectives will provide students with the ability that meets the following program competency:

*BAT-3 Evaluate and make recommendations for clinical and organizational performance using statistical and quality management techniques and procedures.*

*HOP-1 Propose, develop, and defend strategic approaches to operational effectiveness based on quantitative and qualitative evaluations (HOP-1).*

*HEC-1 Perform needs assessments and environmental analyses in support of program and organizational development*

*HEC-2 Analyze and synthesize government policies, laws, and regulations that affect the health care environment*

*LP-2 – Apply effective and appropriate oral and written communication skills*

### **Instructional Methods**

**Units** – The course will be split into 3 units, that are four weeks each. Within each unit, there will be 2 live online sessions (every other week with a total of 6 with one being optional) and 2 sets of asynchronous content contained within Canvas. Each set of live online sessions and synchronous content has its own theme that ties the different activities together within the unit. Within each unit, there is 1 mini-project. All content in the unit is designed to focus on a broad concept. See below for an outline of the units and content organization.

**Lecture** – During the live class, the instructor will deliver an interactive lecture based on a key professional principle relevant to analytics. These will be highly practical and interactive, designed to impart knowledge that will help them be successful in their roles working as or with analysts. Time: 30 minutes.

**Discussions** – The instructor will introduce a topic for discussion amongst the students that will allow them time to reflect on their own experiences and current knowledge base. The instructor will provide on Canvas an initial prompt for discussion as well as a short reading (article) that is designed to promote engagement and difference in opinions. Time: 30 minutes.

**Guests** – The instructor will recruit a guest working in data analytics to attend the live session and partake in a short interview. The instructor will prepare relevant questions to get their perspective and allow them time to impart helpful knowledge to students. Students will also be given a chance to ask their own questions. Time: 30 minutes.

**Skills** – In the live session, time will be given to introduce a specific skill that is relevant to the mini projects. As part of this introduction, the instructor will introduce examples and provide time for students to provide feedback. For example, the instructor will introduce how to deliver concise responses in an email. He will describe key principles and then have students review an email as a group and identify how they would make it different, based on those principles. This session will be complemented with short readings or videos sourced externally for students to review ahead of time organized within Canvas.

**Tools** – To provide students with exposure to software that they may encounter in their professional roles and give them basic information to get started using that software. This will involve a mix of externally sourced videos and articles as well as content developed to help understand the benefits and use cases for the tools. This will be entirely asynchronous content contained within Canvas.

## DESCRIPTION OF COURSE CONTENT

### Course Schedule

Date	Unit	Activities
Week 1-4 1/13-2/8	<b>Unit 1 PLANNING FOR YOUR ANALYSIS</b>	
Live Session 1/16 4:00PM – 6:00 PM	<b>1A</b> <b>Analytics for Everyone</b>	Lecture: The Iceberg Principle (Others will only see 5% of your work) Discussion: Pre-Class Survey Skill: Methods/SOPs, Tech Specs/Business Reqs/Study Protocols Tool: Making clean, organized, data-driven workbooks in Excel Guest: <b>TBD</b>
Live Session 1/30 4:00PM – 6:00 PM	<b>1B</b> <b>Let's Talk About Data</b>	Lecture: All Data Problems are Human Problems Discussion: Saying it back and avoiding miscommunication Skill: Sharing results using DO-IT: Did, Observed, Implied, Takeaway Tool: SQL Basics Guest: <b>TBD</b>
Week 5-8 2/9-3/8	<b>Unit 2 PRODUCING YOUR ANALYSIS</b>	
Live Session 2/13 4:00PM – 6:00 PM	<b>2A</b> <b>Doing an Analysis Well</b>	Lecture: You can use any tool, but some are better for your needs Discussion: Learning new skills on the fly Skill: Working with claims data Tool: Getting started with SAS Guest: <b>TBD</b>
Live Session 2/27 4:00PM – 6:00 PM	<b>2B</b> <b>Doing an Analysis Right</b>	Lecture: Don't worry about making mistakes, focus on catching them Discussion: Handling errors and mistakes Skill: How to assure that your QA is quality Tool: Getting started with Python and R Guest: <b>TBD</b>
Week 9-12 3/9-4/12	<b>Unit 3 PRESENTING YOUR ANALYSIS</b>	
Live Session 3/13 4:00PM – 6:00 PM	<b>3A</b> <b>Seeing is Believing</b>	Lecture: Show, don't tell Discussion: Changing your mind, changing others' minds Skill: Visualization best practices Tool: Getting Started with Tableau and Power BI Guest: <b>TBD</b>
Live Session 4/3 4:00PM – 6:00 PM	<b>3B</b> <b>Bringing it Home</b>	Lecture: There is no right answer, but there are better ones Discussion: New tools on the horizon for data analysis Skill: A 3-bullet email and a 3-slide deck Tool: Machine Learning Basics Guest: <b>TBD</b>

### Course Materials and Technology

Each week, the materials and content will be displayed and collected through **Canvas eLearning**. Students will be expected to visit and engage with that platform as the central organizational element of the course. There is no required textbook for purchase.

Students will be required to have access to Microsoft Office Suite on their own mobile computing devices. Microsoft Office 365 apps (e.g., Excel, Power BI) used in this class can be accessed and installed free of charge using a valid UF account. Students are welcome to acquire and purchase their own licenses for the required software and maintain their own computing environment. However, they will be required to assume all responsibilities for its upkeep. While Python, R, and PostgreSQL are open source, SAS, Stata, and ArcGIS require purchase. UFIT offers an academic license for SAS ([info](#)).

UF Gator Cloud Microsoft Office 365: <https://cloud.it.ufl.edu/collaboration-tools/office-365/>

UFIT Statistical Software (SAS): <https://it.ufl.edu/helpdesk/software-offerings/statistical-software/>

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

- [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu)
- (352) 392-HELP - select option 2
- <https://helpdesk.ufl.edu/>

### Additional Academic Resources

[Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

[Library Support](#): Various ways to receive assistance with respect to using the libraries or finding resources.

[Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

[Writing Studio](#): 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information.](#)

On-Line Students Complaints: [View the Distance Learning Student Complaint Process.](#)

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## ACADEMIC REQUIREMENTS AND GRADING

**Live Session Participation (50%)** – Students will be expected to attend **5 of the 6** live sessions to receive full participation points. At some point during the live session, the instructor will take a screenshot of the Zoom session and those that are visible on screen will be given points for that week.

**Mini Projects (30%)** – Students will be placed into a group of three for the semester. Every four weeks, they will be responsible for completing a short analysis as a team. These will use the data provided to answer a direct question. Students will be required to write an analysis plan, create a workbook showing their analysis, conduct QA on the analysis, and then communicate findings. Mini project 1 is Clinical Data

Analysis. Mini project 2 is Claims Data Analysis. Mini project 3 is Data Visualization. See descriptions in the Assignment tabs on **Canvas E-Learning** for more details on the mini-projects.

**Final Deliverable and Peer Evaluation (20%)**- The final submission for the course will consist of updating the results of their mini-projects based on the feedback provided by the instructor and by other students. Each group will be assigned another group’s work to evaluate and recommend improvements. This will allow students to integrate learning across the course while also being able to complete final deliverables on their own timeframes.

**Grading Policy**

Requirement	Due date/time	% of final grade
Live Session Participation	Each live session, 6:00 PM	50%
Mini Project 1	2/8 11:59 PM	10%
Mini Project 2	3/8 11:59 PM	10%
Mini Project 3	4/12 11:59 PM	10%
Peer Evaluation	4/23 11:59 PM	10%
Final Deliverable	4/23 11:59 PM	10%

Points for the course translate into the following grading scale.

Percentage Earned	Letter Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
Below 60	E

Please be aware that a C- is not an acceptable grade for graduate students. The GPA for graduate students must be 3.0 based on 5000 level courses and above to graduate. A grade of C counts toward a graduate degree only if based on credits in courses numbered 5000 or higher that have been earned with a B+ or higher.

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

More information on UF grading policy may be found at:  
<https://gradcatalog.ufl.edu/graduate/regulations/#Grades>

### **Exam Policy**

There are no exams for this course

### **Policy Related to Make Up Exams or Other Work**

Students are given the allowance in the grading structure to miss 1 class and still receive full points. If students do miss class and wish to simply review material during office hours (without makeup credit), they are more than welcome to do so.

Please note 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> *[For undergraduate courses only.]*

Excused absences must be consistent with university policies in the Graduate Catalog (<https://gradcatalog.ufl.edu/graduate/regulations/#Attendance%20Policies>). Additional information can be found here: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

## **STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT**

### **Expectations Regarding Course Behavior**

This course is designed for master's students in professional programs, and basic standards of professional behavior are expected. This also means that students are given the freedom to participate professionally in a manner that best fits their learning needs.

### **Communication Guidelines**

Students are expected to check @ufl.edu email and Canvas messages regular for course communications as well as expect communications to occur in person in class. The instructor will make every effort to communicate openly and regularly, but the student is responsible for making sure that communication is received. Students should not hesitate to reach out about questions relating to course material after consulting the syllabus. Canvas inbox is best for quick course related chats. @ufl.edu email address is best for more in-depth topics or extra course communication. Mobile phone is available for text or call when urgency or convenience is needed.

Since this course is designed for professionals (and professionals in training), they may refer to the instructor by their first name during all course communication.

### **Policy Related to Guests Attending Class**

Only registered students are permitted to attend class. However, we recognize that students who are caretakers may face occasional unexpected challenges creating attendance barriers. If a student ever is in a position where a caregiving need would prevent them from coming to class, they are encouraged to contract the instructor (this would be a good time to text) and accommodation will be made so that they can still attend class.

### **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 Handbook for additional details:

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

<https://graduateschool.ufl.edu/work/handbook/>

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

### **Recording Within the Course**

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation

for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### **Online Faculty Course Evaluation Process**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

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## **SUPPORT SERVICES**

### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, it is strongly recommended you register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please do this as soon as possible after you receive the letter. Students with disabilities should follow this procedure as early as possible in the semester. 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.



- *U Matter, We Care*: If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling and Wellness Center*: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.
- *Student Health Care Center*: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the [Student Health Care Center website](#).
- *University Police Department*: Visit [UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- *UF Health Shands Emergency Room / Trauma Center*: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the [UF Health Emergency Room and Trauma Center website](#).
- *GatorWell Health Promotion Services*: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the [GatorWell website](#) or call 352-2734450.

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.

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### **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."