



**Data Management and Analysis for Nursing Informatics
NURS 5387
Fall 2026 (Second Flex Session)**

Scheduled Class Days and Times: Online

Instructor's Name: Martha Badger, PhD, RN, NI-BC ([Section P060](#))

Office: Virtual

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Email: mbadger@uttyler.edu*

Office Hours: Virtual Office Hours: Fridays 1-4 pm CT (see Canvas--by appointment for a phone call or video conference). Additional days and times may be arranged upon request. Please email the faculty to make arrangements/obtain a Zoom link.

*Best way to contact me.

Instructor's Name: Janice Miles, PhD, RN, NI-BC ([Section P061](#))

Office: Virtual

Phone: 903.566.7320 (UT SON)

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Office Hours: Virtual Office Hours: Tuesdays 4-5 pm, Wednesdays and Thursdays 9-10 am CT (see Canvas--by appointment for a video conference. Additional days and times may be arranged upon request)

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Course Description: This course examines the fundamentals of database design, maintenance, and security. It also addresses big data, data science, and fundamental analytics.

Prerequisites: None

Student Learning Outcomes:

Upon successful completion of this course, the student will be able to:

1. Explain the importance of data standards, data types, and management in the interoperability of information in healthcare.
2. Demonstrate competency in reporting on data analysis including appropriate visualization and presentation.
3. Compare and contrast elements of big data and data science.
4. Analyze the health status and potential needs of a given population using governmental and organizational data sources.

5. Examine primary and secondary sources of public health data.

Required Textbooks and Readings:

1. Clarke, E (2022). *Data analytics data visualization & communicating data: 3 books in 1.*

Kenneth Fornari

ISBN-13: 978-1777967192

Used or Rental is acceptable

2. McGonigle, D. & Mastrian, K. G. (2025). *Nursing informatics and the foundation of knowledge 6th edition.* Burlington, MA: Jones & Bartlett Learning

ISBN-13: 978-1284293432

Used or Rental is acceptable – no requirement to use online resources

Note: UT Tyler Library has access to 3 copies of the e-book. This means you can access the book for free, but only 3 students can be using the book at a time; otherwise, it becomes unavailable until a student closes the ebook. Access at [UT Tyler e-book link](#)

3. American Nurses Association (2022). *Nursing Informatics: Scope and Standards of Practice, 3rd Edition.* Silver Springs, MD: American Nurses Association

ISBN-13: 978-1953985002

Used is acceptable

Note: Available for free through UTT Library at [Link to free e-book](#)

Recommended Textbooks and Readings:

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). Washington, D.C.: Author.

ISBN-13: 9781433832161

Note: Available to all UTT students for free at <https://stylemanual.apa.org/dashboard>.

Scroll to the bottom section “Open Athens” and select the University of Texas at Tyler from the drop-down menu. You will then be able to login with your UTT username and password. The e-book allows you to highlight and make bookmarks. There are even lessons available on how to do common tasks.

Assignments and Weights/Percentage/Point Values

Criteria for Evaluation	Percentage Weight of Grade
Discussions	30%
Module Quizzes	30%
Other Assignments	40%
50 Practice Hours (refer to the Pass/Fail Course Requirements Information Section)	Pass/Fail
Total	100%

Grading Scale:

Specific guidelines and grading criteria for all assignments are in the Modules. Final grades for the course will be determined based upon the following point assignments:

- A - 90-100
- B - 80-89
- C - 70-79
- D - 60-69
- F - Below 60

Grades will not be rounded when calculating the average (79.5 is not rounded to 80, and 89.5 is not rounded to 90). Students are required to achieve an average of 80% (B) to complete the course successfully.

Academic Integrity: Cheating of any kind, as defined in Section 8 of the UT Tyler Manual of Policies and Procedures (MOPP) for Student Affairs (<https://www.uttyler.edu/mopp/>), will not be tolerated. Consequences may include:

- reprimand
- exam failure
- course failure
- expulsion from the Nursing program
- expulsion from the University
- other consequences as assigned

Artificial Intelligence: UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach

of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

For this course, AI is permitted for specific assignments or situations, as indicated by your course faculty. Appropriate acknowledgment of AI use is required. Learning how to use AI is an emerging skill, and we will work through the limitations of these evolving systems together. To uphold academic integrity and the spirit of scholarly pursuit, when you utilize any generative AI tools to help with the completion of an assignment, it must be properly documented (which tool was used and how it was used). For any assignment requiring [APA formatting and citation style](#) (or other approved style), use the appropriate Style Guide to cite and reference the use of the generative AI tool. Specific assignments may require additional details; see assignment instructions.

Exam and homework materials, questions, and problems are the intellectual property of faculty, UT Tyler, or publishers.

- These materials may not be distributed without permission.
- Distributing or uploading them to online resources destroys the integrity of the assignment and the course, allowing others an unfair advantage by letting them view the materials.
- Uploading these materials to online resources is a violation of UT Tyler's academic misconduct policies and may result in formal conduct charges.
- Sanctions for uploading or otherwise divulging the contents of these materials can include:
 - a reduced or failing grade on an assignment
 - a reduced or failing grade for the course
 - removal from the Nursing program
 - removal from UT Tyler

Late Policy: 5% will be deducted each day an assignment is past due unless prior arrangements have been made with your course faculty. Extenuating circumstances may apply.

Repeating a Course: Students repeating this course may not use previously submitted assignments nor utilize the same patients for an assignment. Submitting the same or slightly modified assignments from previous semesters is considered self-plagiarism and is subject to academic discipline, including failing the assignment or the course.

Attendance and Make-up Policy: Attendance/participation is expected. Make-up for exams, quizzes, assignments, and missed clinical time is at the instructor's discretion.

Graded Course Requirements Information:

The following is an overview of the major graded assignments.

Discussions: Discussion Board assignments cover topics of importance in nursing informatics related to course content. Responses to peers should be substantial. When discussion boards or peer responses must follow a certain format, the details are provided in the instructions and rubric.

Module Quizzes: Most modules will have quizzes addressing content covered in the required videos and readings. The module quizzes may be taken as many times as the student wishes (unless specified otherwise). There is no time limit to each attempt however, there is no save and return function. A minimum of 80 out of 100 possible points is expected for successful completion.

Other assignments: This includes various other assignments that demonstrate a working understanding of the content covered.

Please Note: Detailed information along with grading rubrics for course assignments will be provided in Canvas.

Pass/Fail Course Requirements Information:

If Fall 2025 or thereafter marks your first enrollment in the UT Tyler School of Nursing master's or certificate program, you are required to complete 50 practice hours for this course. If you are in the Nursing Informatics, Quality, and Safety master's program, these hours will count toward the total required 500 hours. You may not resubmit hours approved for this course in another course. We have created a list of ideas for you to choose from that will enhance your skills and competencies. These practice hours are mandated by our accreditation agency, the Commission on Collegiate Nursing Education (CCNE). Completion of 50 practice hours approved through Exxat are required to pass the course.

Important Course Dates:

Classes Begin: October 19, 2026

Census Date (withdraw without penalty): October 23, 2026

Last Date to Withdraw: November 18, 2026

Students, please notify your course faculty and contact your advisor.

Final Exam: N/A

NURS 5387 Data Management and Analysis for Nursing Informatics – 7-week course					
School of Nursing Academic Calendar: https://www.uttyler.edu/academics/academic-calendar-25-26/academic-calendar-school-of-nursing.php					
Dates	Topics	Readings	Due Date	Assignments Due (all students)	Students started prior to Fall 2025
Preview Oct 15	Preview Days Getting Started	UT Tyler syllabus		The Canvas course is open and ready for viewing. No assignments due this week	
Week 1 Oct 19	Welcome Module 1 Data, Data Storage, and Data Mining	Clarke, E (2022) <u>Book section: Everything Data Analytics</u> CH 1: Getting Started with Data Analytics (pp 7-10) CH 2: What Exactly is Data Science? (pp 11-18) CH 3: Understanding Variables (pp 19-22) CH 4: Data Collection (pp 23-32) CH 5: Data Storage (pp 33-40) CH 6: Cleaning Your Data (pp 41-54) CH 7: Analyzing Data (pp 55-60) CH 8: Data Mining and Machine Learning Algorithms (pp 61-74) ANA Nursing Informatics Scope and Standards of Practice (2022) Concepts and Tools from Information Science and Computer Science (pp 18-22) Other Readings/Videos in Canvas	Oct 21	Graduate Affirmation Forms Discussion Board: Class Introductions (initial post)	
			Oct 25	Course Orientation Various Attestations Discussion Board: Class Introduction (reply to peers) Quiz: Unit Quiz	
Week 2 Oct 26	Module 2 Structured Query Language (SQL) and	Clarke, E (2022) <u>Book section: Everything Data Analytics</u>	Oct 28	Discussion Board: 3 Kinds of Bias that Shape Your Worldview (initial post)	

	Fundamentals of Data Visualization	CH 10: Introduction to Data Visualization CH 11: Getting Familiar with Big Data (pp 99-108) Clarke, E (2022) <u>Book section: Beginner's Guide to Data Visualization</u> CH 1: Fundamentals of Data Visualization (pp 147-166) McGonigle & Mastrian (2025) CH 22: Informatics-Based Research Process: Data Mining and Artificial Intelligence (pp 529-548) Other Readings/Videos in Canvas	Nov 1	Discussion Board: 3 Kinds of Bias that Shape Your Worldview (reply to peers) Assignment: SQL Exercises Quiz: Unit Quiz	Quiz- Excel Basics (Units 1-4) Quiz- Working with Cells and Sheets (Units 5-12)
Week 3 Nov 2	Module 3 Data Analysis & Visualization	Clarke, E (2022) <u>Book section: Beginner's Guide to Data Visualization</u> CH 2: Change Over Time (pp 167-186) CH 3: Comparison (pp 187-210) CH 4: Distribution (pp 211-230) CH 5: Part-to-whole (pp 231-244) Other Readings/Videos in Canvas	Nov 8	Assignment: Data Visualization Skills Setting up a Worksheet – Basic Instructions and Data File Quiz: Unit Quiz <i>For those who took their first course in the MSN program Fall 2025 or thereafter</i> Survey Practice Hours Mid-semester Log Status	Quiz- Excel Formulas and Functions (Units 13-16) Quiz – Excel Working with Data (Units 17-24)
Week 4 Nov 9	Module 4 Data Analysis & Visualization continued	Clarke, E (2022) <u>Book section: Beginner's Guide to Data Visualization</u> CH 6: Relationship (pp 245-262) CH 7: Geographical (pp 263-274) CH 8: Tables and Pictograms (pp 275-290) Other Readings/Videos in Canvas	Nov 15	Assignment: Intermediate and Advance Data Analysis Skills Quiz: Basic Data Analysis Skills Unit Quiz	Quiz- Doing More with Excel (Units 25-29)
Week 5 Nov 16	Module 5	Clarke, E (2022)	Nov 22	Assignment: Pivot Tables	

	Public Health Data and Data Visualization	<u>Book section: Beginner's Guide to Data Visualization</u> CH 9: Fundamentals of Design (pp 291-316) CH 10: Chart Redesigns (pp 317-328) Other Readings/Videos in Canvas		Data analysis and visualization using secondary data Quiz: Unit Quiz	
Thanksgiving Break November 23-27					
Week 6 Nov 30	Module 6 Big Data, Interoperability, Data Science, Telling a Story with Data	Clarke, E (2022) <u>Book section: How to Win with Your Data Visualizations</u> CH 1: The Foundation of Data Storytelling (pp 365-380) CH 2: Captivating Your Audience (pp 381-398) CH 5: Crafting a Winning Data Story (pp 479-504) Other Readings/Videos in Canvas	Dec 2	Discussion Board: Big Data and Data Science (initial post)	
			Dec 6	Discussion Board: Big Data and Data Science (reply to peers) Survey: GET PHIT Epidemiology Quiz: Unit Quiz <i>For those who took their first course in the MSN program Fall 2025 or thereafter</i> Practice Hours 50 practice hours due (submitted in Exxat) Survey Practice Hours Due	
Week 7 Dec 7	Module 7 Use of Data Analysis for Quality Reporting and Research	Other Readings/Videos in Canvas	Dec 12 (Sat)	Quiz: Unit Quiz Survey: Reflection on Learning	

School of Nursing Policies and Additional Information:

https://www.utt Tyler.edu/nursing/college/student_guide_and_policies.php

Student Resources and University Policies are provided in Canvas.