



**Data Analysis and Healthcare Technology
NURS 5387
Fall 2025 (Second Flex Session)**

Scheduled Class Days and Times: Online

Instructor's Name: Martha Badger, PhD, RN, NI-BC ([Section P062](#))

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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: Learning to effectively manage and analyze healthcare data is essential to the practice of healthcare informatics. In this course, students examine data standards, management, analysis, application and transformation. The students will have hands-on experience with data analysis from conception of a project to presenting the results. Students will examine other ways technologies are being used in healthcare such as simulation, robotics, wearable devices and communication.

Prerequisites: None

Student Learning Outcomes:

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

1. Explain the importance of data standards and management in the interoperability of information in healthcare.

2. Demonstrate competency in designing, implementing, and reporting on a data analysis project.
3. Design multiple data visualization techniques.
4. Analyze the health status and potential needs of a given population using governmental and organizational data sources.
5. Explore the various ways technologies are being used in healthcare to improve patient outcomes.

Required Textbooks and Readings:

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

ISBN-10: 1284293432

ISBN-13: 978-1284293432

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

This text is used in NURS 5381, 5383, 5385, & 5387

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

<https://ebookcentral.proquest.com/lib/uttyler/detail.action?docID=31072104>

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

ISBN-10: 1953985009

ISBN-13: 978-1953985002

Used is acceptable – no requirement to use online resources

This text is used in NURS 5381, 5383, 5385, & 5387

All students need to load and install Microsoft Office 365 desktop for PC/Mac. Instructions will be found in Canvas.

Other learning materials will be provided in the Canvas course.

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: the APA 7th edition Online Manual is now available to all 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 and Other Assignments	25%
Module Quizzes	25%
Application Assignments	50%
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.

Although the university policy allows 60 days for grade appeals, the School of Nursing follows a stricter timeline of 10 days to facilitate students' timely progression through the curriculum. In the case of extenuating circumstances, please consult the Associate Dean of Academic Affairs for guidance.

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

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 and Other Assignments: 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. Other assignments include various tasks that demonstrate a working understanding of the covered content. There is often an overlap between the discussion board and other assignments, such as an assignment that requires a presentation submitted to the discussion board for peer feedback. The instructions and grading criteria rubric in Canvas detail what is expected.

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.

Application Assignments: Application assignments use computer or web-based applications used by informaticists. A scenario or set of instructions is provided for the student to get hands-on practice using the applications.

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

Important Course Dates:

Classes Begin: October 20, 2025

Census Date (withdraw without penalty): October 24, 2025

Last Date to Withdraw: November 21, 2025. Students, please notify your course faculty and contact your advisor.

Final Exam: N/A

Course Topics

Assignments may be based on current events in nursing informatics and are subject to change by instructors. Go to the Syllabus Page in Canvas for links.

Module Information	Dates	Topics
Module 1 Introductions, Overview, Objectives & Assessments	Week 1	Introductions, Overview, Objectives & Assessments
Module 2 Let's Talk Nerd	Week 2	Information systems, databases, spreadsheets, and structured query language (SQL)
Module 3 Healthcare Data	Week 3	Data Standards & Management, data usage, patient identification, machine learning, and natural language processing
Module 4 Data Analysis & Visualization	Week 4	Healthcare data analytics, visualization, and predictive modeling
Module 5 Using Data to Improve Public Health	Week 5	Role of EHR, public health vs. population health. Privacy, confidentiality, security, and interoperability in public health IT
Module 6 Using Technology to Improve Healthcare Education and Delivery (and Public Health continued)	Week 6	Using Technology to Improve Healthcare Education and epidemiology
Module 7 Final Assessment (and Public Health continued)	Week 7	Public Health IT for Health promotion and prevention, big data, and assess understanding of course content

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.

University Guidelines on the Use of Artificial Intelligence applications by faculty and students

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 encouraged during the course, and appropriate acknowledgment is expected. You are encouraged to explore using artificial intelligence (AI) tools, such as Copilot, for assignments and assessments. Any such use must be appropriately acknowledged and cited, following the guidelines established by the APA Style Guide, including the specific version of the tool used. The submitted work should include the exact prompt you used to generate the content and the AI's complete response as an appendix. Because AI-generated content is not necessarily accurate or appropriate, you must assess the validity and applicability of any submitted AI output. You will not earn full credit if inaccurate, invalid, or inappropriate information is found in your work.

[APA Style Citation Information](#)