



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

Scheduled Class Days and Times: Online

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

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

*Best way to contact me.

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

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

Assignments and Weights/Percentage/Point Values

Criteria for Evaluation	Percentage Weight of Grade
Participation	5%
Discussions	25%
Application Assignments	30%
Learning Assessment Exercises	15%
Module Quizzes	25%
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.

The toolkit competencies focus on students' development of expert-level competencies in the Microsoft Office applications, a foundational skill for an informatics nurse specialist. This course focuses on Microsoft Excel. These skills will be assessed in learning assessment exercises and applied in application assignments.

Each module will have a *Assess Your Understanding* quiz. The module assessment may be taken as many times as the student wishes. 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 for successful completion.

Discussion Boards and webinars cover topics of importance in nursing informatics and may be conducted by faculty or guest speakers. These may change from semester to semester, depending on updated information from the nursing informatics field. This course is focused on data analysis and visualization.

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

Important Course Dates:

Classes Begin: June 23, 2025

Census Date (withdraw without penalty): June 27, 2025

Last Date to Withdraw: July 24, 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 Information	Dates	Topics
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, natural language process, learning organizations, risk, and patient identification
Module 4 Data Analysis & Visualization	Week 4	Healthcare data analytics and visualization
Module 5 Using Data to Improve Public Health	Week 5	Role of EHR, public health vs. population health, data for health promotion, evidence generation
Module 6 Using Technology to Improve Healthcare Education and Delivery	Week 6	Using Technology to Improve Healthcare Education
Module 7 Final Assessment	Week 7	Assess understanding of course content DB: Reflection on Learnings

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](#)