Data Analysis and Healthcare Technology
NURS 5387
Spring 2024

Scheduled Class Days and Times: Online

Instructor's Name: Martha Badger, PhD, RN-BC (Section .060)
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Office Hours: Virtual Office Hours: Fridays 1-3 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.

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. (2018) *Nursing informatics and the foundation of knowledge 5th edition*. Burlington, MA: Jones & Bartlett Learning

ISBN-13: 9781284122688
Used or Rental is acceptable – no requirement to use online resources
This text is also used in NURS 5381, 5385, & 5387
All students need to load and install Microsoft PowerPoint 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: January 11, 2024
Census Date (withdraw without penalty): January 24, 2024
Last Date to Withdraw: January 24, 2024. 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
Toolkit	Jan 11-Apr 27, 2024	Toolkit Competencies: Data analysis & visualization software – spreadsheet software
Module 1 Introductions, Overview, Objectives & Assessments Calendar Week 1	Jan 11-21, 2024	Introductions, Overview, Objectives & Assessments
Module 2 Let's Talk Data Calendar Weeks 2-4	Jan 22-Feb 4, 2024	Information systems, databases, and structured query language (SQL)
Module 3 Healthcare Data Calendar Weeks 5-6	Feb 5-Feb 25, 2024	Data Standards & Management, data usage, natural language process, learning organizations, risk, and patient identification
Module 4 Data Analysis & Visualization Calendar Week 7-10	Feb 26-Mar 24, 2024	Healthcare data analytics and visualization
Module 5 Using Data to Improve Public Health Calendar Weeks 11-13	Mar 25-Apr 14, 2024	Role of EHR, public health vs. population health, data for health promotion, evidence generation

Module Information	Dates	Topics
Module 6 Using Technology to Improve Healthcare Education and Delivery Wrap-up and Finals Calendar Weeks 14-15	Apr 15-27, 2024	Using Technology to Improve Healthcare Education DB: Reflection on Learnings

School of Nursing Policies and Additional Information:

https://www.uttyler.edu/nursing/college/student_guide_and_policies.php

Student Resources and University Policies are provided in Canvas.