The University of Texas at TYLER
School of Nursing

Spring 2022

Course Number: NURS 5387
Sections: .060
Course Title: Data Analysis and Healthcare Technology

Course Faculty

See information in the Canvas syllabus page – faculty information redacted for web version

Instructor's Name:	
Office Address:	
Telephone:	
Preferred Email:	
Office Hours:	

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.

Course Credit and Clock Hours: 3 credit hours (3 clock hours per week)

Class Time: Primarily asynchronous in Canvas Learning Management System. Any scheduled live web meetings will be recorded for those who cannot attended in real-time. Those who cannot participate in real-time discussions during webinars may have a 2-3 paragraph assignment in addition to watching recorded webinar.

Prerequisites: None

Nursing Organization Mappings

- American Association of Colleges of Nursing (AACN) MSN Essentials III, V, VIII
- Quality and Safety Education for Nurses (QSEN) Competencies: Quality Improvement, Safety, & Informatics

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Program Student Learning Objectives

At the completion of the MSN-IQS degree program, the graduate will be able to:

1. Integrate scientific knowledge and theories from nursing and related disciplines into advanced nursing practice;
2. Apply organizational and systems leadership principles and methods for the promotion and evaluation of quality, ethical, and safe patient care;
3. Translate, integrate, and disseminate scientific evidence into practice;
4. Utilize technologies to deliver, enhance, integrate, and coordinate communication, education, and patient care;
5. Intervene at the systems level through the policy development process and employ advocacy strategies to influence health care;
6. Manage care through collaboration with other health care professional as a member and leader of health care teams; and
7. Integrate organizational client centered concepts to provide preventive and population-based care.

Course 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.

Course Topics

The course topics are based on the 2018 ANCC Test Plan for Certification in Nursing Informatics and the 2017 Healthcare Information and Management Systems Society (HIMSS) Certified Associate in Health Information and Management Systems (CAHIMS) Certification.

Module Information	Topics
Toolkit	Toolkit Competencies: Data analysis & visualization software – spreadsheet software
Module 1 Introductions, Overview, Objectives & Assessments Week 1	Introductions, Overview, Objectives & Assessments
Module 2 Let's Talk Nerd Weeks 2-4	Information systems, databases and structured query language (SQL)
Module 3 Healthcare Data Weeks 5-6	Data Standards & Management, data usage, natural language process, learning organizations, risk, and patient identification
Module 4 Data Analysis & Visualization Week 7-8	Healthcare data analytics and visualization

Module Information	Topics
Module 5 Using Data to Improve Public Health Weeks 10-13	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 14	Using Technology to Improve Healthcare Education
Wrap up	

Required Textbooks

McGonigle, D. & Mastrian, K. G. (2018) *Nursing informatics and the foundation of knowledge 4th 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, 5383, & 5387

All students need to load and install Microsoft Excel 2016 and the Excel Analysis ToolPak for PC/Mac. Instructions will be found in Canvas.

Other learning material will be provided in the Canvas course.

Optional

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). Washington, D.C.: Author.
ISBN-13: 9781433832161

Course Schedule

The course schedule, including assignment due dates and last day to withdraw without penalty, may be found in the course schedule posted in the "Syllabus" in Canvas.

- Census Date: January 10, 2022
- Mid-Term Exam: none
- Last Date to Withdraw: March 21, 2022
- Final Exam Date: none

Grades and Grading

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

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The weighted average of the graded assignments must be 80% or above to pass the course. All assignments should be submitted prior to the pre-determined due date, unless prior arrangements have been made with the course faculty and a new due date determined.

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

Group Member Feedback and Grading

For group projects, the instructor may allow for members to provide feedback on contributions and work effort of other group members. This feedback may be taken into account in issuing individualized grades for group projects. In other words, the input of your group members may positively or negatively affect your grade on these projects.

Rounding: 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 expected to achieve an average of 80% (B) to successfully complete the course.

Assignments

Criteria for Evaluation	Percentage of Grade
Participation	5%
Discussions	20%
Required Webinars	20%
Application Assignments	25%
Toolkit Learning Assessment Exercises - Word	10%
Module Quizzes	20%
Total	**100%**

Academic Integrity

Students are expected to assume full responsibility for the content and integrity of all academic work submitted. Refer to the *Graduate Nursing Student Guide* for policies regarding conduct and discipline.

Assignments Submission Process

All assignments will be submitted through the "Assignments" tab or can also be submitted in the Modules tab in Canvas unless otherwise indicated. Please use the following process to prepare and submit assignments:

- Prepare your assignment using Microsoft Word unless otherwise directed.
- Access the "Assignments" tab (or in the Modules tab) and click on the Assignment link.
- If you need more instructions on "how-to" submit files through the assignment link, please read the Canvas Help for Students located in the Tools area.

Assignments are a major part of the course work and should receive appropriate attention. All assignments must meet the standards for graduate-level work (spelling, punctuation, syntax, grammar, content, and most of all, scholarliness). It is expected that all assignments will be completed in a **timely manner**, unless arrangements have been made by you and your faculty. Five (5) points may be deducted for each day an assignment is late.

Written Assignments

Unicheck is a feature provided by Canvas that is designed to detect plagiarism or non-original student work. Your instructor decides which assignments will ultilize this application. This feature is set up so that when you submit papers, they are automatically sent through Unicheck. The program checks your work against a comprehensive database of source material including previous students' work and other papers and materials found on the web. An originality report will be generated that indicates the percentage of non-original material (text that matches existing sources) found in your paper. The purpose of using Unicheck in your course is to ensure you are writing original papers and to encourage you and all students to properly attribute all sources used.

All submitted written material (papers, assignments, examinations, etc.) are the property of the School of Nursing and will be maintained in an archived file at UT Tyler.

Participation Expectations and Discussions Assignments

- Each student participant is responsible for participating in the asynchronous discussions for each Discussions post. This participation will include posting answers to questions posed by the instructor and replying to other participants' postings.
- Discussion postings should be made in a timely manner. Deadlines are listed in the Course Schedule. Please note that all discussion postings must be completed by 11:59pm Central Standard Time on the due date.
- Participants should plan on entering the Discussion area at least three times a week to read and comment on others' postings. Posting answers to the questions posed in the Discussion area should be done in advance of the deadline to allow other participants to have the opportunity to comment. The requirements for postings and responses to your peers are listed in each discussion assignment and may vary based on the discussion.

You may check your grades at any time on the Canvas website. Feedback on assignments will be provided via the gradebook.

Quizzes

Any quizzes are for your learning and to help you keep up your skills at completing multiple choice exams as all certifications in informatics require timed multiple-choice examinations. Quizzes in this class will be open book and students will unlimited attempts with the highest score received by due date recorded.

Pre/Post Class Knowledge Assessment Survey

Each of the classes in the informatics program will have a pre/post knowledge assessment survey to assist the faculty in understanding your own perception of your knowledge growth during this course. Points are awarded for completion of both surveys not on the content of the survey. Completion of only one survey is not sufficient to obtain the indicated points.

Recording of Class Sessions

Class sessions may be recorded by the instructor for use by students enrolled in this course. Recordings that contain personally identifiable information or other information subject to FERPA shall not be shared with

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individuals not enrolled in this course unless appropriate consent is obtained from all relevant students. Class recordings are reserved only for the use of students enrolled in the course and only for educational purposes. Course recordings should not be shared outside of the course in any form without express permission.

School of Nursing Policies and Additional Information:

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

12/2021 COVID Update:

"The COVID-19 situation continues to be fluid, with SON and university policies and procedures changing in response. Please keep apprised of the most recent updates through your SON program site in Canvas (faculty could put link here specific to BSN, MSN, DNP, Ph.D.) and the university website *(https://www.uttyler.edu/coronavirus/)"*

Student Resources & University Policies

Updated Student Resources & University Policies and Information are available in the Canvas course Syllabus Module.

Email Communications

All students are required to use their student **Patriot email accounts** for all correspondence (Approved FO: 2/03). To communicate by email within the course with other participants or all participants, click the Tools link on the left side of the Canvas frame. Click Send E-mail to send a message. You are able to send messages to All Users or Select Users in the course, including the instructor. Faculty will not respond to personal email (e.g. Gmail, Yahoo, Hotmail, AOL, ATT accounts, etc.). Please comply with University Policy regarding electronic communication. Your instructor's work email is listed in Canvas as a backup option.

Questions or problems other than technical problems may be submitted to the email address above. For technical issues, please refer to the Technical Information/Technical Support in this Syllabus.

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