Introduction to the Course

As you navigate through the course, you will be learning about medical informatics and how it has expanded to other related fields.

Healthcare is information driven and depends on knowledge discovery. In today’s world, medical knowledge is created at a rapid pace, and it is disseminated in a variety of modalities to those working in healthcare areas and to the consumer of health services.

Medical informatics has made it possible for data and information to be more accessible regardless of the point of origin. Information technologies are making advances that allow rapid, accurate, and more secure exchange of medical information. Health information technology is impacting the delivery of health care. Privacy and security of health data and information continues to demand much attention.

Government initiatives keep changing the practice of medicine. A major issue in health informatics is the abundance of data available. More information resources are generated, and we are challenged to stay current. Practices of information processing are raising questions of the practice of medicine, including patient safety, health disparities, and ethical values.

Be sure to think about the skills and competencies needed to work all the branches of health informatics.

Let's start on our journey to learn more about the fascinating discipline of informatics and its applications to healthcare.
Faculty

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Phone: 940-565-2445  
Office Hours: Available by appointment.

Additional faculty participating in the course:

Jodi L. Philbrick  
PhD, AHIP

LeAnn Boyce  
RRT, MA, MS

Cindy Sharp, MS

Course Description

Informatics in healthcare. The framework of modern healthcare and the role of information. Organization of medical knowledge. Key health information resources used in decision-making. Information systems and technology and its applications to healthcare settings and libraries.

Learning Outcomes

By the end of the semester, students will be able to:

• Describe the framework of modern healthcare and the role that information plays in patient care.
• Explain the concept of informatics in the healthcare environment and its intersection with health sciences librarianship.
• Discuss the structure of medical data, information, and knowledge.
• Describe the information behavior of healthcare providers, researchers, and consumers.
• Identify key health information resources for medical decision-making.
• Explain the application of information systems and technology to healthcare.
• Identify and discuss trends in health informatics.

Textbook


Course Content and Organization
This course is organized into six modules, including:

- Module 1: Introduction to Health Informatics
- Module 2: Health Informatics in the Healthcare Framework
- Module 3: Organization of Medical Knowledge
- Module 4: Searching for Medical Information
- Module 5: Healthcare Information Systems and Technology
- Module 6: Trends in Health Informatics

**Course Requirements**

There are five course requirements:

- Discussion Questions
- Medical Vocabularies
- PubMed Tutorial
- Resources
- Final Paper
- Chats with Health Informatics Professionals.

**Discussion Questions (100 points each x 3 = 300 points total)**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To learn about the foundational aspects of the field of health informatics and synthesize the readings in order to answer discussion questions relevant to issues in health informatics.</th>
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</thead>
<tbody>
<tr>
<td>Description</td>
<td>Each of the course modules has associated readings from the textbook and outside literature. Students will be answering three discussion questions based on their module readings.</td>
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</table>

- Discussion Question 1 covers Modules 1 and 2.
- Discussion Question 2 covers Modules 3 and 4.
- Discussion Question 3 covers Modules 5 and 6.

<table>
<thead>
<tr>
<th>Instructions</th>
<th>Answer the provided discussion question in 300-500 words and cite at least 3 readings from the appropriate modules. In-text citations and the list of references should follow APA 6th edition style.</th>
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<tbody>
<tr>
<td>Submission</td>
<td>Submit your discussion question answers to the appropriate modules in Canvas.</td>
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</table>
### Medical Vocabularies (100 points)

<table>
<thead>
<tr>
<th><strong>Purpose</strong></th>
<th>To introduce medical vocabularies, terminologies, and nomenclatures and understand their basic structure.</th>
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</thead>
</table>
| **Description** | Students will be reviewing two (2) of the following medical vocabularies, terminologies, and/or nomenclatures:  
- International Classification of Diseases (ICD)  
- Medical Subject Headings (MeSH)  
- Systematic Nomenclature of Medicine – Clinical Terms (SNOMED-CT)  
- Unified Medical Language System (UMLS) |
| **Instructions** | Select two (2) of the medical vocabularies, terminologies, and/or nomenclatures listed above, and write a 400-600 word report comparing and contrasting their features. Your report should follow APA 6th edition style.  
Include the following items about each selected vocabulary, terminology, and/or nomenclature in your report:  
- Publisher  
- Purpose and use  
- Organization and structure  
- Strengths and weaknesses  
(Suggestion: You might want to take a specific term (e.g., Non-Hodgkin’s Lymphoma) and compare how it is handled in the tools you are reporting on.) |
| **Submission** | Submit your report to the appropriate module in Canvas. |

### PubMed Tutorial (50 points)

<table>
<thead>
<tr>
<th><strong>Purpose</strong></th>
<th>To learn how to search PubMed, a key resource to access the biomedical world literature.</th>
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<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Students will complete an online tutorial on how to search PubMed and use the knowledge gained to complete a scenario.</td>
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</table>
**Instructions**

This assignment will be completed in two parts:

**Part I: PubMed Tutorial**


**Part II: Scenario**


You are a clinician scheduled to give a morning conference talk for students as part of an oncology information series. You need to find articles to read to prepare.

1. Select one of the common cancers from the following site: [http://www.cancer.gov/cancertopics/types/commoncancers](http://www.cancer.gov/cancertopics/types/commoncancers)

2. Using PubMed and the selected cancer as your topic
   a. Search for a review article about cause of this cancer.
   b. Search for a recent article reporting results of a clinical trial testing a therapy for this cancer.
   c. Use Clinical Queries (under PubMed tools) feature to find a systematic review about some aspect of this cancer.

3. Provide the type of cancer you selected to search and a citation for each of a-c using the MEDLINE display format (this is the one that lists all the headings used and can be quite long). You will have a total of 3 citations.

**Submission**

Submit your answers to the scenario to the appropriate module in Canvas.

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**Information Resources (100 points)**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To gain exposure to key information resources for healthcare decision-making.</th>
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<tbody>
<tr>
<td>Description</td>
<td>Students will review key information resources.</td>
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</table>
Instructions | For each of the following information resources listed below, write an original description that includes: (1) producer of the source; (2) key features (note: provide more than just a listing); (3) modalities the source is available (i.e. mobile app, website)

- ClinicalKey - https://www.clinicalkey.com/#/!
- Epocrates - https://www.epocrates.com/
- MedlinePlus - https://medlineplus.gov/
- Micromedex - http://truenhealth.com/Products/Micromedex/Product-Suites/Clinical-Knowledge
- UptoDate - https://www.uptodate.com/home
- VisualDX - https://www.visualdx.com

Submission | Submit your assignment to the appropriate module in Canvas.

Final Paper (300 points)

Purpose | To explore a topic of interest in the area of health informatics in greater depth, conduct a literature review, and use critical thinking skills.

Description | The paper will be developed in three (3) parts:

- Final Paper Topic
- Final Paper Outline
- Final Paper

Instructions | Final Paper Topic (not graded, but required)

Suggested topics include:
- Electronic health records
- Wearable health devices
• Standards in medicine
• Robotics in medicine
• Personal health records
• Health information exchanges
• Artificial intelligence in medicine
• Evidence-based healthcare
• mHealth
• Telehealth
• Clinical decision-making
• Natural language processing in medicine
• Machine learning
• Health data analytics
• Privacy and security in healthcare
• Others (must be approved)

In your submission, of the topic include:
• Your name
• The proposed topic
• A brief description of the topic

**Final Paper Outline (50 points)**

Each student will submit a one-page outline of his/her proposed paper that includes the information to be covered and the structure of the paper. Use headings to represent the content to be included in your paper.

(Hint: The Online Writing Lab at Purdue University has information about how to develop an outline.)

**Final Paper (250 points)**

Each student will submit a paper that is a minimum of 6 pages in length (excluding references), double-spaced. The paper should follow APA 6th edition style.

**Submission**

Each of the three parts of the final paper (Topic, Outline, and Paper) will be submitted to the appropriate modules in Canvas.
**Chats with a Health Informatics Professionals (50 points each x 3 = 150 points)**

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To provide the students with an opportunity to interact with professionals in the field.</th>
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<tbody>
<tr>
<td>Description</td>
<td>Students are <strong>required</strong> to attend each of the 3 chat(s) via Zoom and review the knowledge they gained from the professional.</td>
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<tr>
<td>Instructions</td>
<td>Log into the chat room assigned via Zoom, and after each chat has concluded, write a 100-200 word report that includes 3 key points that you learned from the professional. Please notify the faculty in advance if you will not be able to attend the chat.</td>
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<tr>
<td>Submission</td>
<td>Submit your chat reports to the appropriate modules in Canvas.</td>
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</table>

**Course Grading**

<table>
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<tr>
<th>Category</th>
<th>Points</th>
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<tr>
<td>Discussion Questions</td>
<td>300</td>
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<td>Medical Vocabularies</td>
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<tr>
<td>Chats with Health Informatics Professionals</td>
<td>150</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1000 points</strong></td>
</tr>
</tbody>
</table>

**Technology Requirements**

It is important to read and understand the Technology Requirements outlined by the Department of Information Science: [http://informationscience.unt.edu/technology-requirements](http://informationscience.unt.edu/technology-requirements). Be sure to note that Microsoft Office is the standard software for the Department.
Course Policies

Attendance

Students are expected to fulfill their online responsibilities, unless otherwise arranged with the course faculty. Not meeting this requirement can impact your final grade.

Communication

Weekly announcements and other important course announcements will be posted in the “Announcements” feature of Canvas, and students are expected to the monitor this area and read the posts.

Your Canvas e-mails will be read as soon as possible, but please DO NOT EXPECT immediate answers. We make every effort to answer your e-mails within 48 hours.

The Canvas discussions area is a public domain that will be seen by all students. If you have questions or concerns that you do not want made public, please direct them to the course faculty in Canvas e-mail.

Please be sure to include your name on all documents that are sent as attachments. When attachments are printed, they become separate from the e-mail that you originally sent. Including your name on all attachments will help insure that your assignments are received and that you are given credit for them. PUT YOUR NAME ON EVERYTHING YOU SUBMIT. Your name should be included in the top right hand corner of the document.

Grading

You can expect to have your assignments graded and returned to you within two weeks of submission; however, the faculty will strive to have them graded and returned to you within one week. If there are any delays in grading assignments, students will be notified via the “Announcements” feature in Canvas.

Late Assignments

Students are expected to submit all of their assignments on time unless other arrangements have been made with the faculty prior to the due date of the assignment(s). Late work will not be accepted unless approved by the faculty.
University Policies

Academic Integrity Standards and Consequences

According to UNT Policy 06.003 (https://policy.unt.edu/policy/06-003), Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

Students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam. Additionally, the incident will be reported to the Dean of Students, who may impose further penalty.

Note: In this course, cheating and/or plagiarism will not be tolerated.

ADA Accommodation

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one’s specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website at disability.unt.edu.

Acceptable Classroom Behavior

Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom, and the instructor may refer the student to the Center for Student Rights and Responsibilities to consider whether the student’s conduct violated the Code of Student Conduct. The University’s expectations for student conduct apply to all instructional forums, including university and electronic classrooms, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at http://www.unt.edu/csrr/student_conduct/index.html

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the
event of a university closure, please refer to Canvas for contingency plans for covering course materials.