



**NURS 3353 Informatics & Technology  
Fall 2021  
Internet**

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**Office Hours: T 0900-1300, Th 0900-1500 or by appointment**

**Required Textbooks**

Nelson, R. & Stagers, N. (2018). *Health Informatics: An Interprofessional Approach, 2<sup>nd</sup> edition*. St. Louis: Elsevier, Inc.

Resources: Instructor-Led Course  
Evolve Resources for Health Informatics, 2nd Edition  
Course ID: 157592\_srondeau5\_1001  
Instructor: Sandra Rondeau

\*This product is an electronic or online application.

**Textbook Purchasing Statement:** *A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.*

**Course Description**

This course establishes the role of electronic information infrastructure in the delivery of care within the institution and inter-disciplinary care team. Focus of this course includes the utilization of informatics to access data to enhance quality and continuity of care in a variety of healthcare settings. (Credit 3: Lecture 3, Lab 0) (8-week course, 48 contact hours)

**Course Objectives/Student Learning Outcomes**

Upon completion of this course, the student will:

1. Integrate knowledge, skills, and abilities gained from personal experiential learning, prerequisite, and co-requisite courses in the program of study.

2. Discuss the history and current scope of practice for health informatics in healthcare.
3. Develop basic understanding of common computer-generated spreadsheets and the application to nursing.
4. Use databases to access information.
5. Integrate information technology to provide safe, patient-centered care.
6. Differentiate the information needs of the healthcare provider, patient, organization, and insurer in various healthcare settings.
7. Distinguish the legal and ethical implications related to use of information technology.
8. Analyze the impact of information technology on the delivery of safe quality care at the organizational level.
9. Evaluate the impact of information technology on the delivery of safe quality care for the individual, family, and community.
10. Examine the relationship of information technology to interdisciplinary communication, collaboration, and continuity of care.

### **Methods of Instruction**

Case studies  
 Lecture  
 Oral presentations  
 Group discussions  
 Assignments  
 Quizzes  
 Audio-visual instructional aids  
 Written Reports/Clinical Reasoning exercises  
 Mapping studies

### **Grading Scale**

A = 90 -100.00  
 B = 80 -89.99  
 C = 75 -79.99  
 D = 60 -74.99  
 F = < 60

### **Grade Calculation**

| <b>Assignment</b>  | <b>%</b>    |
|--|-------------|
| Discussion board   | 30 %        |
| Unit quizzes   | 25 %        |
| Participation/attendance                                       | 10 %        |
| Group informatics project paper                                | 35%         |
| <b>Grade Total</b>   | <b>100%</b> |
| *A Grade Total of at least 70% is required to pass the course. |             |

### **Attendance**

See the Attendance policy in the Nursing Student Handbook.

**Tardiness**

See Attendance policy in the Nursing Student Handbook.

**Withdrawal**

See Admission, Progression, Dismissal, & Readmission policy in the Nursing Student Handbook.

**ADA Statement**

Any student with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). The Office of Services for Students with Disabilities is located in the Student Success Center.

**Early Academic Alert Program**

The Counseling Center at College of the Mainland has implemented an Early Academic Alert Program. Students will be referred to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If referred to the Academic Alert Program, students will be contacted by someone in the Counseling Department. As student success and retention is very important to us, someone from the Counseling Department will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

**Classroom Conduct Policy/Student Conduct**

Classroom Conduct Policy: College of the Mainland requires that students enrolled at COM be familiar with the Standards of Student Conduct, which can be found in the on-line Student Handbook. <http://www.com.edu/student-services/studenthandbook.php> . Students should act in a professional manner at all times. Disruptive students will be held accountable according to college policy. Any violations of the Code of Conduct will result in a referral to the Office for student Conduct and may result in dismissal from this class.

In addition to the Standards of Student Conduct found in the online COM Student Handbook (<http://www.com.edu/student-services/student-handbook.php>), nursing students are expected to demonstrate good professional character as defined in in BON Rule 213.27 ([http://bon.texas.gov/rr\\_current/213-27.asp](http://bon.texas.gov/rr_current/213-27.asp)). See Behavior/Conduct in the Nursing Student Handbook.

**Academic Dishonesty**

Any incidence of academic dishonesty will be dealt with in accordance with college policy and the Student Handbook. Academic dishonesty, such as cheating on exams, is an extremely serious offense. See Behavior/Conduct policy in the Nursing Student Handbook.

**Plagiarism**

Plagiarism is using someone else's words or ideas and claiming them as your own. Plagiarism is a very serious offense. Plagiarism includes paraphrasing someone else's words without giving proper citation, copying directly from a website and pasting it into your paper, using someone else's words without quotation marks. Any assignment containing plagiarized material will receive a **grade of zero** and the student will be referred to the Office of Student Conduct for the

appropriate disciplinary action. Also see the Behavior/Conduct policy in the Nursing Student Handbook.

**Avoiding Plagiarism:** <http://www.plagiarism.org/>

### Course Requirements

1. **Discussion board (8):** Assess knowledge and application of incremental course content. Students are required to submit a primary post each week that is reflective of the weekly reading assignments and is supported by cited references. Students are required to reply to two of their peers each week and responses must entail new information to the post supported by cited references. Failure to submit assignments by the designated due date may result in a zero for the assignment. (see read me first posting)
2. **Quizzes (6):** Assesses knowledge and application of content integrated within the course. Students will complete quizzes as assigned, each due at midnight on the assigned deadline. The quizzes are multiple choice, multiple answer, and alternative-style questions. The student will have one attempt to complete each quiz, which will be averaged for the quiz grade.
3. **Weekly Participation:** Assesses ability to synthesize information when collaborating on a topic with peers. Participation entails including new information to the weekly post supported by cited material. Participation entails turning assignments in by the designated due date.
4. **Group Informatics Project Paper:** The Group Informatics Project Paper is a comprehensive paper in which the assigned group of students will choose a relevant informatic topic to develop a nursing perspective in the healthcare setting. The students will analyze the roles of the baccalaureate prepared nurse including Provider of patient-centered care, Patient safety advocate, Member of the Interdisciplinary Team, and Member of the Profession. (*See announcements for Group Paper Rubric*).

### Make-Up Policy/Late Assignments

All course assignments are expected to be completed and submitted on the specified due date. See Late Assignments policy in the Nursing Student Handbook.

### Concerns/Questions

If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact the Course Facilitator. If, after discussing your concern with the Course Facilitator, you still have questions, please email [nursing@com.edu](mailto:nursing@com.edu) to request an appointment with the Director of Nursing. Please see the Student Concerns Policy in the Nursing Student Handbook for further instructions.

### Successful Tips for Students

1. Schedule time to study based on the difficulty of the content. Use this table as a guide:

| Course Difficulty | Study Hours Per Week Per Hour in Class |
|-------------------|--|
|-------------------|--|

|                          |         |
|--------------------------|---------|
| High Difficulty Course   | 3 hours |
| Medium Difficulty Course | 2 hours |
| Low Difficulty Course    | 1 hour  |

[http://www.usu.edu/arc/StudySmart/pdf/estimating\\_study\\_hours.pdf](http://www.usu.edu/arc/StudySmart/pdf/estimating_study_hours.pdf)

2. Read assignments before class or clinical. Here are some strategies for getting the most out of your college textbooks:

- 4 Steps to Reading a Textbook:  
<http://www.studyright.net/blog/4-steps-to-reading-a-textbook-quickly-and-effectively/>
- Active Reading Strategies:  
<http://www.princeton.edu/mcgraw/library/for-students/remember-reading/>
- The Reading Cycle: Plan-Do-Review  
<http://www2.swccd.edu/~asc/lrnglinks/txtrdg.html>
- How to Read Your Textbooks More Efficiently College Info Geek (video)  
<https://www.youtube.com/watch?v=tgVjmFSx7rg>
- 5 Active Reading Strategies for Textbook Assignments College Info Geek (video)  
[5 Active Reading Strategies for Textbook Assignments - College Info Geek](https://www.youtube.com/watch?v=r2tIeRUbRHw)

### **ANA Scope and Standards of Practice**

Students are expected to adhere to established ANA Scope and Standards of Practice (2015)

### **Student Handbooks**

Students are expected to adhere to all policies outlined in the College and Nursing Program student handbooks.

### **Syllabus Revisions**

Faculty reserves the right to make changes to the syllabus as deemed necessary.

### **The Speaking, Reading, and Writing Center**

The Speaking, Reading and Writing Center provides free tutoring services to students, staff and faculty seeking assistance for writing, reading and oral presentations for academic and non-academic assignments/projects. Located in the Technical Vocational Building, Room 1306, the center provides face-to-face and online tutoring sessions in a welcoming environment.

Appointments can be made in person, or on the center scheduler at [com.mywconline.com](http://com.mywconline.com), or by clicking the SRWC icon on the COM website.

### **Surviving Active Shooter Event Reference and Training Videos**

Run, Hide, Fight \* (**Mandatory**)

<https://www.youtube.com/watch?v=5VcSwejU2D0>

Last Resort ACTIVE SHOOTER SURVIVAL Measures by Alon Stivi

<https://www.youtube.com/watch?v=r2tIeRUbRHw>

Surviving an Active Shooter Event - Civilian Response to Active Shooter  
<https://www.youtube.com/watch?v=j0It68YxLQQ>

Make the Call \* (**Mandatory**) <https://www.youtube.com/watch?v=AWaPp-8k2p0>

Discussion Questions:

1. What is your plan while in class to consider running, hiding, or fighting to survive?
2. How would you lock your classroom and/or barricade entry into the classroom?
3. What would you use to improvise weapons to take down the shooter / aggressor?
4. If you have to fight, would you COMMIT to the fight to save your life and others?
5. If you have a License to Carry and are concealed carrying, what guidelines would you follow?
6. Do you have the campus police emergency number and non-emergency number programmed into your phone?
  - a. COM Police Emergency number (409-933-8599)
  - b. COM Police Non-Emergency number (409-933-8403).
7. When the police arrive why would you have your hands up and follow all commands?
8. Why is it important to make the call to report any suspicious person or activity to campus police?

## **Course Content**

### **Unit 1: An Introduction to Health Informatics**

#### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Define healthcare informatics.
2. Discuss the significance of health informatics within healthcare delivery.
3. Provide an overview of health informatics-related topics.

#### **Learning Content:**

- I. Introduction
- II. Definition of Health Informatics
- III. Topics and areas of study in informatics
  - A. Unit 1: Fundamental Information in Health Informatics
  - B. Unit 2: Information Systems and Applications for the Delivery of Healthcare
  - C. Unit 3: Participatory Healthcare Informatics (Healthcare on the Internet)
  - D. Unit 4: Managing the Life Cycle of a Health Information System
  - E. Unit 5: User Experience, Standards, Safety, and Analytics in Health Informatics
  - F. Unit 6: Governance Structures, Legal, and Regulatory Issues in Health Informatics
  - G. Unit 7: Education and Health Informatics

- H. Unit 8: International Health Informatics Efforts
- I. Unit 9: Historical Implications and Future Directions in Health Informatics
- IV. Conclusion and Future Directions

**Learning Activities:**

Read:

Nelson, R. & Stagers, N. Chapter 1

Activity:

BlackBoard Discussion: An Introduction to Health Informatics

**Unit 3: Evidence-Based Practice, Practice-Based Evidence, and Health Informatics**

**Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Explore trends in evidence-based quality improvement.
2. Discuss the implications of evidence-based quality improvement for various levels and types of healthcare organizations as well as across multiple professions.
3. Review effective models in structuring evidence-based practice (EBP) initiatives.
4. Define the goals and analyze processes employed in practice-based evidence (PBE) designs.
5. Analyze the strengths and weaknesses of observational designs in general and of PBE specifically.
6. Identify the roles and activities of the informatics specialist in PBE in healthcare environments.
7. Discuss the synergistic role of EBP and PBE in developing informatics-based solutions for managing patients' care needs.

**Learning Content:**

- I. Introduction
- II. Evidence-Based Practice
- III. Evidence-Based Practice Models
- IV. Stevens Star Model of Knowledge Information
  - A. Point 1: Discovery Research
  - B. Point 2: Evidence Summary
  - C. Point 3: Translation to Guidelines
  - D. Point 4: Practice Integration
  - E. Point 5: Evaluation
- V. Informatics and Evidence-Based Practice
- VI. Relationships of EBP and PBE
  - A. EHRs and PBE Knowledge Discovery
  - B. Knowledge Building Using Health Information Technology
- VII. Practice-based Evidence
  - A. Practice-Based Evidence Features and Challenges
  - B. Steps in a PBE Study

C. Limitations and Strengths of Practice-Based Evidence Studies  
VIII. Informatics and Practice-based Evidence  
IX. Conclusion and Future Directions

**Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 3

Activity:

BlackBoard Discussion: Evidence-Based Practice, Practice-Based Evidence, and Health Informatics

**Unit 3 quiz**

**Unit 6: Electronic Health Records and Applications for Managing Patient Care**

**Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Analyze terms and definitions associated with the electronic health record (EHR).
2. Describe the essential components and attributes of an EHR.
3. Define *federal requirements* in the context of EHR adoption and the impact on health practitioners.
4. Examine EHR applications used in the clinical setting.
5. Analyze the benefits of an EHR related to cost, access, quality, safety, and effectiveness.
6. Evaluate stakeholder perspectives and key issues that affect EHR adoption.
7. Explore future directions for EHR adoption and integration.

**Learning Content:**

I. Introduction

A. Early Terms and Definitions

B. Electronic Medical Record Versus Electronic Health Record

II. Electronic Health Record Components, Functions, and Attributes

III. Sociotechnical Perspectives

A. Electronic Health Record Adoption

IV. Electronic Health Record Applications Used in the Clinical Setting

A. Computerized Provider Order Entry

B. Electronic Medication Administration Record

C. Bar Code Medication Administration

D. Clinical Documentation

E. Specialty Applications

F. Clinical Decision Support

G. Ancillary Systems

V. Electronic Health Record Benefits

A. Cost

B. Access

C. Quality, Safety, and Efficiency of Care Delivery



## VI. Stakeholder Perspectives

- A. Consumers
- B. Nurses
- C. Healthcare Providers
- D. Healthcare Organizations
- E. Insurance Payers
- F. State and National Governments

## VII. Key Issues

- A. Cost
- B. Ownership
- C. Data Integrity
- D. Privacy and Confidentiality
- E. Standards
- F. Organizational Culture
- G. User Experience
- H. Patient Access to the Electronic Health Record
- I. Patient-Generated Health Data

## VIII. Conclusion and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 6

Activity: BlackBoard Discussion: Electronic Health Records and Applications for Managing Patient Care

### **Unit 6 Quiz**

## **Unit 8: Telehealth and Applications for Delivering Care at a Distance**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Discuss the historical milestones and leading organizations in the development of telehealth.
2. Explain the two overarching types of telehealth technology interactions and provide examples of telehealth technologies for each type.
3. Describe the clinical practice considerations for telehealth-delivered care for health professionals.
4. Analyze operational and organizational success factors and barriers for telehealth within healthcare organizations.
5. Discuss practice and policy considerations for health professionals, including competency, licensure and interstate practice, malpractice, and reimbursement for telehealth.
6. Describe the use of telehealth to enable self-care in consumer informatics.
7. Discuss future trends in telehealth.

### **Learning Content:**

- I. Introduction

- A. Examples of Successful Telehealth Programs
- B. Telehealth Historic Milestones
- C. Leading Telehealth Organizations
- III. Telehealth Technologies
  - A. Synchronous or “Real-Time” Technologies
  - B. Asynchronous or “Store-and-Forward” Technology
  - C. Technical Standards in Telehealth
- IV. Telehealth Clinical Practice Considerations for Healthcare Professionals
  - A. Equal To or Better Than In-Person Care?
  - B. Telehealth Clinical Competency
  - C. Confidentiality, Privacy, and Informed Patients
  - D. Scope of Clinical Practice
  - E. Types of Clinical Telehealth Applications
- V. Telehealth Operational and Organizational Success Factors and Barriers
  - A. B.E.L.T. Framework
  - B. Operational Telehealth
  - C. Telehealth Acceptance and Training
  - D. Telehealth Implementation
- VI. Telehealth Challenges: Licensure and Regulatory Issues for Healthcare Professionals
  - A. Licensure
  - B. Credentialing and Privileging
  - C. Reimbursement
  - D. Malpractice and Liability
- VII. Telehealth and Direct Patient Health Services
  - A. Patient-to-Provider Telehealth-Delivered Care
  - B. Delivering Direct Care Using Health Monitoring Tools and Biometric Sensors
  - C. Telehealth Technology and Healthcare Consumers
- VIII. Conclusion and Future Directions

**Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 8

Activity: BlackBoard Discussion: Telehealth and Applications for Delivering Care at a Distance

## **Unit 9: Home Health and Related Community-Based Systems**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Describe home health, palliative care and hospice, public health, nurse-managed health centers, and other practice models.
2. Summarize the supporting electronic health records (EHRs) and information systems used at community and home-based practice sites.
3. Specify the value of the clinical data and information that can be generated by information systems used at practice sites.

### **Learning Content:**

- I. Introduction
- II. Evaluation and Milestones
- III. Practice Models
  - A. Home Health
  - B. Palliative Care and Hospice
  - C. Community-Based Public Health
  - D. Nurse-Managed Health Centers
  - E. Other Practice Sites
  - F. Similarities Among Practice Models
- IV. Standardized Datas
  - A. Outcome and Assessment Information Set
  - B. Hospice Item Set
  - C. Patient-Experience Surveys
- V. Supporting Home Health with Electronic Health Records and Health Information Technology
  - A. Billing Solutions
  - B. Point-of-Care Solutions
  - C. Clinical Decision Support Systems
- VI. Standardized Terminologies
- VII. Omaha System
  - A. Description
  - B. Clinical Example from Practice
- VIII. Conclusion and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 9

Activity: BlackBoard Discussion: Home Health and Related Community-Based Systems

## Unit 10: Clinical Decision Support Systems in Healthcare

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Describe why clinical decision support is needed and its impact.
2. Explain the major types of clinical decision support.
3. Analyze best practices for clinical decision support.
4. Synthesize the current adoption status and the barriers to the wide adoption of clinical decision support.
5. Outline recent progress toward disseminating clinical decision support on a national level.

### **Learning Content:**

#### I. Introduction

- A. Definition of Clinical Decision Support

#### III. Practice Models

- A. Home Health
- B. Palliative Care and Hospice
- C. Community-Based Public Health
- D. Nurse-Managed Health Centers
- E. Other Practice Sites
- F. Similarities Among Practice Models

#### IV. Standardized Datas

- A. Outcome and Assessment Information Set
- B. Hospice Item Set
- C. Patient-Experience Surveys

#### V. Supporting Home Health with Electronic Health Records and Health Information Technology

- A. Billing Solutions
- B. Point-of-Care Solutions
- C. Clinical Decision Support Systems

#### VI. Standardized Terminologies

#### VII. Omaha System

- A. Description
- B. Clinical Example from Practice

#### VIII. Conclusion and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 10

Activity: BlackBoard Discussion: Clinical Decision Support Systems in Healthcare

## **Unit 12: The Engaged Patient**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. List at least three “e” terms used to describe ePatients.
2. Explain the driving forces behind the emergence and continuing evolution of the ePatient movement.
3. Discuss the characteristics of digital healthcare consumers.
4. Describe how the quantified self uses health-related data.
5. Analyze the implications of ePatients for clinical practice.
6. Identify technological innovations likely to be used in routine practice by clinicians in the future when caring for patients.

### **Learning Content:**

- I. Historical Background and Drivers of the Epatient Evolution
  - A. ePatient as a Pioneering Concept
  - B. Our Connected World
  - C. Policy and Legislative Influences
  - D. Characteristics of Digital Healthcare Consumers
- II. Convergence of Epatients, Clinicians, Patient-Centered Models of care, and Informatics
  - A. Participatory Patient-Centered Healthcare
  - B. The New Role of Clinicians and Informatics in ePatient Care
  - C. Health Informatics and ePatients
  - D. Transparency and Access Data
- III. Health 3.0 Emerges
  - A. Virtual Patient Communities and Research Networks
- IV. Conclusions and Future Directions
  - A. 21<sup>st</sup> Century Health and Healthcare

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 12

Activity: BlackBoard Discussion: The Engaged Patient

**Quiz unit 12**

## **Unit 13: Social Media Tools for Practice and Education**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Describe social media tools and their benefits.
2. Explore the current and potential use of social media in healthcare and healthcare education.
3. Analyze the issues and challenges associated with the use of social media in healthcare and healthcare education.
4. Provide guidance for writing social media policies.

### **Learning Content:**

- I. What is Social Media?
- II. Social Media Tools
  - A. Social Networking
  - B. Blogging and Wikis
  - C. Microblogging (Twitter)
  - D. Social Bookmarking
  - E. Video and Image Sharing Content
- III. Social Media Statistics
- IV. Benefits of Social Media
- V. Challenges of Social Media
  - A. Privacy and Confidentiality
  - B. Inappropriate Behaviors
  - C. Security
  - D. Regulatory Issues
  - E. Market Pressure
- VI. Social Media in Education
- VII. Policy
  - A. Guidelines for Writing Policies
  - B. Resources for Policy Development
- VIII. Conclusion and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 13

Activity: BlackBoard Discussion: Social Media Tools for Practice and Education

**Unit 13 quiz**

## **Unit 14: Personal Health Records**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Describe trends and events leading to the development and adoption of electronic personal health records (PHRs).
2. Describe the history of Blue Button.
3. Describe the ideal PHR and its proposed benefits.
4. Explain the different types of PHRs and the pros and cons of each type.
5. Provide examples of existing PHRs, including their function and usage.
6. Evaluate current evidence regarding the effectiveness of PHRs as an approach to improve healthcare.
7. Explore issues affecting the adoption of current PHRs.
8. Discuss the future of PHRs.

### **Learning Content:**

- I. Definitions of the Personal Health Record
- II. The Development of the Electronic Personal Health Record
  - A. Blue Button for Patient Access to Electronic Health Records
- III. Principles of an Ideal Personal Health Record
  - A. Proposed Benefits of an Ideal Personal Health Record
  - B. Types of Personal Health Records
- IV. Examples of Existing Personal Health Records
- V. Current Evidence of Benefits of Personal Health Records
  - A. Experience of Care
  - B. Quality of Care
  - C. Cost/Utilization
- VI. Current Use of Personal Health Records
- VII. Barriers to Personal Health Record Adoptions
  - A. Awareness
  - B. Usability
  - C. Privacy Concerns
  - D. The Digital Divide
  - E. Provider Engagement
  - F. Interoperability
  - G. Summary of Adoption
- VIII. The Future of Personal Health Records

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 14

Activity: BlackBoard Discussion: Personal Health Records

## **Unit 21: Improving the User Experience for Health Information Technology**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Compare and contrast the terms *user experience*, *human factors*, *ergonomics*, *human-computer interaction*, *usability*, and *design thinking*.
2. Discuss the potential benefits of incorporating usability into organizational processes.
3. Describe the goals of usability and user-centered design.
4. Identify the major components to consider in human-computer interaction and usability studies.
5. Analyze methods for conducting usability studies and relate them to a specific purpose of a usability study.
6. Outline components of four different usability tests related to their position in the systems life cycle.
7. Explain the basic steps in conducting a usability test on a healthcare IT product.

### **Learning Content:**

- I. Introduction to Improving the User Experience
  - A. The Current User Experience with Health Information Technology Products
- II. Definition of Terms and Their Relationships
  - A. User Experience
  - B. Human Factors
  - C. Ergonomics
  - D. Human-Computer Interaction
  - E. Usability
- III. The Goals of Usability
- IV. User-Centered Design
  - A. Design Thinking
  - B. Potential Benefits of Improving the User Experience
- V. Human Interaction Frameworks for Health Informatics
  - A. Human Factors and Human-Computer Interaction Frameworks
  - B. The Health Human-Computer Interaction Framework
  - C. Essential Components for Improving the User Experience
- VI. Selecting Methods to Improve the User Experience
  - A. Discount Usability Methods
  - B. Traditional Usability Methods
  - C. Contextual Inquiry or Focused Ethnographies
- VII. Formal User Testing
  - A. Usability Questionnaires
- VIII. Selecting a Type of Usability Test
  - A. Determining User Needs and Requirements
  - B. Formative Tests



- C. Validation Tests
  - D. Comparison Test
  - E. Identifying Usability Issues with Fielded Health IT Products
  - F. Steps for Conducting User Experience Tests
- IX. Conclusion and Future Directions

**Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 21

Activity: BlackBoard Discussion: Improving the User Experience for Health Information Technology

**Unit 24: Patient Safety and Quality Initiatives**

**Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Define patient safety and quality of care from a health informatics perspective.
2. Describe the role of health information technology (IT) in advancing the quality and safety of healthcare in the United States.
3. Analyze three national initiatives driving adoption and use of health IT to improve safety and quality of care in the United States.
4. Explore two national initiatives related to promoting quality data standards in the United States.
5. Discuss the three components of the Framework for Patient Safety and Quality Research.
6. Describe how the Framework for Patient Safety and Quality Research can be used to evaluate quality and patient safety interventions.

**Learning Content:**

- I. Introduction
- II. Definitions
  - A. Quality of Care
  - B. Patient Safety
- III. National Initiatives Driving Adoption and Use of Health It
- IV. National Efforts Related to Quality Data Standards
- V. Evaluating Quality and Patient Safety
  - A. Conceptual Framework for Patient Safety and Quality
  - B. Medication Safety
  - C. Chronic Illness Screening and Management
  - D. Nursing Sensitive Quality Outcomes: Patient Falls and Pressure Ulcers
- VI. Success Factors and Lessons Learned
- VII. Conclusion and Future Directions

**Learning Activities:**

Read:

Nelson, R. & Stagers, N. Chapter 24

Activity: BlackBoard Discussion: Patient Safety and Quality Initiatives

**Unit 24 quiz**

**Unit 25: Legal Issues, Federal Regulations, and Accreditation**

**Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Describe the U.S. governmental processes and structure for regulating health information technology (health IT).
2. Explain the difference between laws, regulations, and sub-regulatory guidance.
3. Discuss the intersection of federal fraud and abuse regulations as they relate to electronic health records (EHRs) and health IT.
4. Discuss the impact of informatics-related regulations on payment reform.
5. Outline accreditation measures and agencies in the United States.

**Learning Content:**

I. Introduction

II. Legal System

- A. Federalism and the Constitution
- B. Federal Healthcare Regulatory Framework
- C. Enforcement

III. Fraud and Abuse and Billing Issues Related to Electronic Health Record Use

- A. Stark Law
- B. Federal Anti-Kickback Statute
- C. Safe Harbors
- D. False Claims Act
- E. Wire/Mail Fraud
- F. Fraud and Abuse and the Electronic Health Record
- G. State Law

IV. Accreditation

- A. The Joint Commission Health Information Management Standards
- B. Sentinel Events Alert

V. The Intersection of New Technology and Regulation

- A. Medical Devices
- B. mHealth Wearable Devices and Telehealth
- C. Social Media and Informatics

VI. Conclusion and Future Directions

**Learning Activities:**

Read:

Nelson, R. & Stagers, N. Chapter 25

Activity: BlackBoard Discussion: Legal Issues, Federal Regulations, and Accreditation

## Unit 26: Privacy and Security

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Describe and explain the following informatics concepts: privacy, security, confidentiality, integrity, availability, covered entity, and business associate.
2. Analyze current federal and state laws and regulations and their implications for privacy and security practices and procedures.
3. Use appropriate resources in establishing and implementing both privacy- and security-related policies and procedures.
4. Apply common procedures for securing sensitive health information.

### **Learning Content:**

I. Introduction

II. Definitions and Concepts

III. Legal and Historical Context

- A. Fair Information Practice and Principles
- B. Code of Ethics for Health Informatics Professionals
- C. International Medical Informatics Association

IV. Principles, Laws, and Regulations Guiding Practice

- A. National Privacy and Security Framework for Health Information Laws and Regulations
- B. International Laws
- C. U.S. Federal Law
- D. ONC Tool for Integrating Privacy and Security into Health Practices
- E. Federal-State Collaboration
- F. HIPAA and Secondary Uses of Electronic Health Data
- G. Public Health Monitoring Surveillance and HIEs
- H. De-identification of Data

V. The Importance of Information Security

- A. The Public Trust
- B. Legal Requirements and Fines
- C. Increasing Security Threats to Healthcare Data

VI. Current Security Vulnerabilities

- A. External Events
- B. Internal Vulnerabilities
- C. Medical Devices

VII. Current Security Challenges

- A. Administrative
- B. Technical
- C. Physical

VIII. Resources

IX. Conclusions and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 26

Activity: BlackBoard Discussion: Privacy and Security

### **Unit 26 quiz**

## **Unit 28: Health Policy and Health Informatics**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Identify key health policy issues of importance to the practice of health for informatics.
2. Explain the process for developing and utilizing informatics principles and concepts in developing health policy.
3. Differentiate the Institute of Medicine (IOM) recommendations in the *HIT and Patient Safety* and *The Future of Nursing* reports.

### **Learning Content:**

- I. Introduction
- II. Developing and Implementing Health Information Technology Policy
  - A. Role of the Federal Government
  - B. Office of the National Coordinator for Health Information Technology
- III. Driving Forces for Creating Health Information Technology Policy
  - A. Patient Safety
  - B. Institute of Medicine Report on Health Information Technology and Patient Safety
  - C. Unintended Consequences of Health Information Technology Implementation
  - D. Quality Initiatives
- IV. Leadership Competencies for Developing and Implementing Health Information Technology Policies
  - A. Ensuring That Health Practitioners Are Positioned on Key Committees and Boards
  - B. Responding to Requests for Comments
  - C. Developing Position Statements
- V. Leading Policy Activities Through Organizational Work and Leadership
  - A. Strategies
- VI. Discipline-specific Policies: Nursing
  - A. Use of Health Information Technology to Advance the Future of Nursing
  - B. Healthcare Information and Management Systems Society Nursing Informatics Position Statement
  - C. Assessing Progress on the Institute of Medicine Report: *The Future of Nursing*
- VII. Conclusions and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 28

Activity: BlackBoard Discussion: Institute of Medicine Report: *The Future of Nursing*



## **Unit 33: Simulation in Healthcare Education**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Define the different types of simulation modalities available.
2. Describe the challenges and opportunities inherent to simulation.
3. Apply the 2016 International Nursing Association for Clinical Simulation and Learning (INACSL) Standards of Best Practice: Simulation<sup>SM</sup> in developing educational experiences.
4. Discuss the use of simulation-based education in interprofessional experiences.
5. Analyze the similarities and differences related to the available simulation resources.
6. Develop evidence-based simulation activities.

### **Learning Content:**

#### I. Introduction

- A. Type of Simulators
- B. Fidelity
- C. Benefits of Simulation
- D. Challenges and Opportunities

#### II. The Simulation Process

- A. Learning Theories Applied to Simulation
- B. International Nursing Association for Clinical Simulation and Learning Standards of Best Practice: Simulation

#### III. Application of Simulation

- A. General Application of Simulation to Education
- B. Application of Simulation for Evaluation
- C. Application of Simulation to Interprofessional Education
- D. Example

#### IV. Conclusion and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 33

Activity: BlackBoard Discussion: Simulation in Healthcare Education

## **Unit 34: International Efforts, Issues, and Innovations**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Outline key international eHealth initiatives.
2. Describe key organizations that are leading international initiatives to promote eHealth.
3. Discuss global challenges to eHealth.

### **Learning Content:**

- I. Introduction
- II. Key Initiatives in World Regions
  - A. eHealth Initiatives in Europe
  - B. eHealth Initiatives in the Asia-Pacific Economic Cooperation Region
  - C. eHealth Initiatives in the Pan American Health Organization Region
  - D. eHealth Initiatives in Africa
- III. International Organizations with eHealth Involvement
  - A. eHealth and Health Informatics at the World Health Organization
  - B. International Medical Informatics Association
- IV. International Standards Efforts
  - A. International Organization for Standardization
  - B. International Council of Nurses
  - C. Health Level Seven
  - D. International Terminology Standards Development Organisation
- V. Global Challenges to eHealth
  - A. Global Interoperability
  - B. Human Resources for eHealth
  - C. eHealth Infrastructure
  - D. Legal and Regulatory Framework for eHealth
- VI. Conclusion and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 34

Activity: BlackBoard Discussion: International Innovations

## **Unit 35: The Evolution of Health Informatics**

### **Unit Student Learning Outcomes:**

Upon completion of this unit, the student will be expected to:

1. Discuss the development of health informatics as a discipline, profession, and specialty.
2. Analyze how historical events have influenced the definition and current scope of practice of health informatics.
3. Explore informatics-related professional organizations and their contributions to professional development and informatics.
4. Analyze the history and process for naming the specialty and the discipline.

### **Learning Content:**

- I. Introduction
- II. The Roots of Informatics within the Computer and Information Sciences
  - A. Computer Science
  - B. Information Science
  - C. Health Informatics
- III. Establishing the Specialty of Health Informatics
  - A. Books
  - B. Professional Organizations
  - C. Educational Programs
  - D. Accreditation for Health Informatics Education Programs
  - E. Certification
  - F. Recognition by the U.S. Bureau of Labor Statistics
- IV. Recognition of the Specialty
- V. Naming the Specialty—Naming the Discipline
- VI. Conclusion and Future Directions

### **Learning Activities:**

Read:

Nelson, R. & Staggers, N. Chapter 35

Activity: BlackBoard Discussion: The Evolution of Health Informatics



Course calendar and assignment due dates:

| Date               | Weekly content | Assignments  |
|--------------------|----------------|--|
| Week 1 10/18-10/24 | Unit 1 & 3     | <p><b>Discussion board.</b><br/>                     Primary post due by 10/21/21 by 2359.<br/> <b>Discussion replies</b> to two of your peers due by 10/24/21 by 2359<br/> <b>Quiz unit 3</b> due by <b>10/24/21 2359</b></p>     |
| Week 2 10/25-10/31 | Units 6, 8 & 9 | <p><b>Discussion board.</b><br/>                     Primary post due by 10/28/21 by 2359.<br/> <b>Discussion replies</b> to two of your peers due by 10/31/21 by 2359.<br/> <b>Quiz unit 6</b> due by <b>10/31/21 by 2359</b></p> |
| Week 3 11/01-11/07 | Units 10 & 12  | <p><b>Discussion board.</b><br/>                     Primary post due by 11/04/21 by 2359.<br/> <b>Discussion replies</b> to two of your peers due by 11/07/21 by 2359<br/> <b>Quiz unit 12</b> due by <b>11/07/21 by 2359</b></p> |
| Week 4 11/08-11/14 | Units 13 & 14  | <p><b>Discussion board.</b><br/>                     Primary post due by 11/11/21 by 2359.<br/> <b>Discussion replies</b> to two of your peers due by 11/14/21 by 2359<br/> <b>Quiz unit 13</b> due by <b>11/14/21 by 2359</b></p> |
| Week 5 11/15-11/21 | Units 21 & 24  | <p><b>Discussion board.</b><br/>                     Primary post due by 11/18/21 by 2359.</p>   |

|                    |               |  |
|--------------------|---------------|--|
|                    |               | <p><b>Discussion replies</b> to two of your peers due by 11/21/21 by 2359</p> <p><b>Unit quiz 24</b> due by <b>11/21/21 by 2359</b></p>  |
| Week 6 11/22/11/28 | Units 25 & 26 | <p><b>Discussion board.</b> Primary post due by 11/25/21 by 2359.</p> <p><b>Discussion replies</b> to two of your peers due by 11/28/21 by 2359</p> <p><b>Quiz unit 26</b> due by <b>11/28/21 2359</b></p> |
| Week 7 11/29-12/05 | Units 28 & 33 | <p><b>Discussion board.</b> Primary post due by 12/02/21 by 2359.</p> <p><b>Discussion replies</b> to two of your peers due by 12/05/21 by 2359.</p> <p><b>Term paper</b> due by 12/05/21 by 2359</p>      |
| Week 8 12/06-12/10 | Unit 34 & 35  | <p><b>Discussion board.</b> Primary post due by 12/08/21 2359.</p> <p><b>Discussion replies</b> to two of your peers due by 12/09/21 by 2359</p>   |