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854 Advanced Informatics

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XAVIER UNIVERSITY | COLLEGE OF NURSING**Spring 2020****Course Number and Title:** NURS 854 (202001-NURS-854-01) – Advanced Informatics**Number of Credits:** 3 semester credits**Faculty:** Barbara J Wright, MSN, RN-BC, INS
wrightb6@xavier.edu (preferred contact method)
Cell: 513-503-8415
Office Hours: By appointment**Time & Location:** **On campus:** Tuesday 10:00am-12:50pm, Cohen 110
Off-campus: Canvas/Zoom Meeting ID: 946-720-8579**Course Description:**

The focus is to improve clinical and administrative decision making through an in-depth understanding of healthcare informatics. Emphasis is on technology-based health applications which support clinical, administrative, research, and educational decision making enhancing the efficacy of nursing endeavors. Current trends and issues in using, designing, and managing health care information systems will be examined.

Course Objectives

1. Analyze past, current, and anticipated future developments in healthcare informatics
2. Evaluate the relationship between pertinent theories, such as communication, and healthcare information technology as they apply to health care delivery and research.
3. Synthesize knowledge from various information sources to increase accessibility and usability of health care information.
4. Discuss the legal, ethical, social, and professional issues associated with health care and nursing information systems.
5. Discuss the structure of computer languages and architecture used in healthcare informatics systems. (medical and nursing taxonomies, medical coding and classification systems)
6. Use computer programs to access and manage a variety of sources of data, information, and knowledge.
7. Apply system life cycle principles for administrative and clinical computing environments.
8. Synthesize literature relevant to health care and nursing informatics.

Teaching strategies

Web Enhanced
Relevant Readings
Class discussion
PowerPoint presentations

Textbooks and Learning resources

Required textbooks

Nelson, R. & Staggers, N. (2018). Health Informatics An Interprofessional Approach (2nd ed.). St. Louis, MO: Elsevier Mosby.

Recommended/or used as references with the lecture notes

American Psychological Association (1994). Publication manual of the American Psychological Association (6th ed.). Washington, DC: Author.

Kudyba, S.P. (2010). Healthcare Informatics Improving Efficiency and Productivity, CRC Press, Boca Raton, Florida.

Nursing Informatics. Scope and Standards of Practice (2008), American Nurses Association, Maryland.

Library Resources on Xavier Portal: Microsoft office software tutorials. There will be some instructor demonstration of Microsoft Word, Excel, PowerPoint, and Visio to ensure you have exposure to these applications during this course.

Student Responsibilities

1. Notifying the professor as necessary for assistance in facilitating understanding of course content or any concerns/problems *prior* to any due assignments.
2. Reading and critically reflecting on material related to course content and assignments.
3. All assignments are to be submitted electronically through Canvas (preferred), or by email.
4. Submit only individual and original student work.

Communication

Students should expect an email response from the faculty within a 24-48 hour framework (during normal business hours) unless notified about an exception to this time frame. Students in this course will be notified when instructor is unavailable for e-mails and/or phone calls.

Attendance

All students are expected to attend scheduled classes. If the class is online the expectation is for the students to participate in blackboard discussions throughout the week. If the absence is unavoidable the student should notify the faculty member prior to the missed class. The student is responsible for any missed class content. Exceptions will be allowed at the discretion of the faculty.

Assignments

Refer to class outline for the due date of assignments and online quizzes. All course assignments and papers must be submitted electronically. Late posting of assignments or papers will only be accepted at the discretion of the instructor. All papers must be referenced (prefer primary references) utilizing the APA manual (6th ed.).

Course Discussion

Students are expected to actively engage in informed Canvas discussion with other students. These discussions should demonstrate active involvement with the material being considered. Students will share their perspective about their own ideas and consider the ideas of others. Students will have a shared responsibility for learning and for creating and sustaining the learning community that will be developed within the context of this course. Examples of informed participation are:

Quality	<i>Comments or questions increase knowledge and stimulate thinking</i>	Comments or questions stimulate thinking	Comments or questions simply reaffirm existing knowledge ("I agree")
Quantity	<i>Consistently contributes to discussion</i>	Not consistent with contribution to discussion	No contribution to discussion
Professional language	<i>Consistently uses professional language that reflects significant understanding of concepts</i>	Frequently uses professional language that demonstrates some understanding of concepts	Rarely uses professional language. Demonstrates minimal to no understanding of concepts

Course and Resource Materials

- This course is web enhanced through Canvas.
- A variety of methods will be utilized in and out of class to enhance the learning experience:
 - Links to supplemental readings and media
 - Blackboard exercises and class participation activities
 - Examples of assignments for student reference

Course and supplemental materials/links will be made available to students through Canvas. Xavier's Library offers a convenient service of providing direct access to many full text articles online. If an article is not available, the library will request the article through the Interlibrary Loan system, and forward an electronic copy to you via e-mail. Only materials from reputable, professional web sites and journals should be considered.

The Canvas course software enables the instructor to know who logged into the course, where in the course site they have visited, and how long they stayed. The Technology Support people also have access to all information posted in Canvas. Consider this every time you enter the virtual classroom and post assignments or submit materials under your user name. Represent yourself truthfully at all times in this course. **Do not allow access to the course by anyone other than you. Falsifying identity is grounds for disciplinary action of all parties involved.**

Online Grade Book

Students will have access to the online grade book via Canvas. This grade book is confidential and only available to the individual student. Unless noted otherwise, it is anticipated that grades for assignments will be posted within two weeks after the submission deadline.

Technology Needed to Participate in Program:

To use Canvas and view supplemental materials, students will need access to computer hardware, computer software, and Internet access. Either an IBM compatible PC or a Macintosh type computer is acceptable.

Faculty Office Hours: If you have any questions, concerns, or if you do not understand the material please contact the instructor via e-mail to arrange a phone conference or an appointment to meet with the instructor.

Course Modification: The instructor reserves the right to modify lecture objectives, content, learning experiences and time allotted to specific material presented in original course outlines or on the Canvas site.

Student Handbook: Students are required to follow the policies and procedures described in the Nursing Student Handbook and in the Xavier University Student Handbook:
<http://www.xavier.edu/deanofstudents/documents/studenthandbook.pdf>

Students with Disabilities: If you have a documented disability and wish to discuss academic accommodations, please contact course faculty as soon as possible.

Grading:

94 - 100 =	A
90 - 93 =	A-
87 - 89 =	B+
83 - 86 =	B
80 - 82 =	B-
79 - 76 =	C+
70 - 75 =	C
69.4 =	F

Note: For University prerequisite course where the faculty use a +/- grading scale, the department of nursing considers a C- to be within the C range. Rounding of percentages: Round up if equal to or greater than .5; or round down if less than .5.

Grading:

Learning Activity	Possible Points
1. Class Assignments (3 total)	15
2. Analysis & Executive Summary Paper (3 total)	15
3. Canvas Discussion (3 total)	15
4. Quiz (2) – open book/essay questions	20
5. Final Paper	20
6. Final Presentation	15
Total Grade	100%

Grading Rubric for Canvas Discussion	Possible Points
1. Responses to each topic and/or questions to include scholarly articles, professional experience and insights related to topic	4
2. Responses to other students postings to include quality questions and thoughtful feedback	1
Total points	5

NURS 854: Analysis and Executive Summary Instructions

Analysis & Executive Summary Papers

(The instructor will post scenario executive summaries on canvas)

1. Title Page and references in APA format

2. **Analysis Worksheet:** The purpose of the worksheet is to organize the information gathered for the executive summary. This information can be formatted in bullet points, tables or in the format. **See example posted on Canvas.**
 - a. Statement of the issue
 - b. Alternative technology solutions (at least 3)
 - c. Assessment of alternative technology solutions
 - d. Decision criteria for choice
 - e. Recommended technology solution
 - f. Implementation plan for technology
 - g. Assumptions and missing information

3. **Executive Summary:** The information gathered from the analysis worksheet (above) is formally presented in a one-page executive summary (single spaced). **See example posted on Canvas.**

Grading Rubric for Analysis & Executive Summary	Possible Points
1. Title Page	0.5
2. Analysis Worksheet a. Statement of the issue b. Alternative technology solutions (3 total) c. Decision criteria for choice d. Assessment of the alternatives e. Recommended technology solution f. Implementation plan g. Assumptions and missing information	1.0
3. Executive Summary a. Statement of the issue (.25) b. Alternative technology solutions (3 total) (.5) c. Decision criteria for choice (.25) d. Assessment of the alternatives (.5) e. Recommended technology solution (.25) f. Implementation plan (.5) g. Assumptions and missing information (.5) h. Spelling, grammar and punctuation (.25)	3.0
4. Reference Page Set (minimum of 3 references)	0.5
Total points	5

NURS 854: Final Paper & Presentation

The purpose of this assignment is to provide the student an opportunity to:

1. Identify an evidence-based approach to research informed practice decisions.
2. Gain an understanding of the appropriate use of technology to enhance care outcomes.
3. Demonstrate knowledge and skills to educate other healthcare professionals using current software technologies.
4. Demonstrate knowledge and skills to write an executive summary.
5. Demonstrate knowledge and skills of scholarly writing (APA, grammar, writing mechanics, APA formatting, use of appropriate resources (primary references and quality internet resources).

Grading Rubric for Final	Possible Points
<p>Final Paper (6-8 pages total)</p> <ol style="list-style-type: none"> 1) Executive Summary (1 page) (1 pt.) 2) Executive Summary Paper (5-7 pages) 3) Statement of the issue (2 pts.) 4) Alternative solutions (1 pt.) 5) Decision criteria for choice (2 pts.) 6) Assessment of the alternatives (2 pts.) 7) Recommended technology solution (1 pt) 8) Implementation and plan (2 pts.) 9) Assumptions and missing information (2 pts.) 10) Spelling, grammar and punctuation (2 pts.) 11) Significance to nursing (2 pts.) 12) Describe how this technology will improve patient outcomes (2 pts.) 13) Title page (0.5 pts.) 14) Reference page (0.5 pts.) 	20
<p>Final Power Point Presentation (10-15 minutes)</p> <p><u>Presentation</u></p> <ul style="list-style-type: none"> Statement of the issue (1 pt.) Alternative solutions (1 pt.) Decision criteria for choice (1 pt.) Assessment of the alternatives (1 pt.) Recommended technology solution (1 pt.) Implementation and plan (1 pt.) Assumptions and missing information (1 pt.) Significance to nursing (1 pt.) Describe how this technology will improve patient outcomes (1 pt.) <p><u>Professional presentation style</u></p> <ul style="list-style-type: none"> Presenters are professionally attired (1 pt.) Power point presentation <ul style="list-style-type: none"> - Overall visual appeal/creativity (1 pt.) - Effects and transitions (1 pt.) - Flow of power point (1 pt.) - Time management (1 pt.) Class questions/answers (1 pt.) 	15

Calendar – NURS 854 Advanced Informatics / Spring 2020

Week / Date	Lecture Topic	Assignment
#01 - 01/14/20	<i>Introductions</i>	Complete Course Assessment Review Course materials posted on Canvas
#02 – 01/21/20	<i>Nursing Informatics Go-live Checklist Ergonomics</i>	Readings: Unit I (CH 1-5): <i>Background and Foundational Information</i>
#03 – 01/28/20	<i>Electronic Health Record & Veterans National Informatics Strategic Plan, EMR Policy SWOT Analysis</i>	Canvas Discussion #1 due Readings: Unit II (CH 6-11): <i>Information Systems in Healthcare Delivery</i>
#04 – 02/04/20	<i>Clinical Decision Support Alert Fatigue Medical Home Model</i>	Executive Summary #1 due Readings: Unit III (CH 12-15): <i>Healthcare Informatics and Healthcare on the Internet</i>
#05 – 02/11/20	<u>Guest Speaker:</u> <i>Project Management</i>	Class Assignment #1 due Readings: Unit IV (CH 16, 17, 19, 20) <i>Project Management: Tool & Procedures</i>
#06 – 02/18/20	<i>Basic Interfacing Concept Web Design</i>	Executive Summary #2 due Readings: Unit V (CH 21-24): <i>Quality, Usability, and Standards in Informatics</i>
#07 – 02/25/20	<i>System Life Cycle</i>	QUIZ #1 (Units I-IV) due
#08 – 03/03/20	<i>CE- Normalization of Deviance Meaningful Use Quality Metrics</i>	Canvas Discussion #2 due Readings: Unit VI (CH 25-29): <i>Governance & Organizational Structures for Informatics</i>
03/10/20	SPRING BREAK	NO CLASS
03/17/20	SPRING BREAK - Extended	NO CLASS
#09 – 03/17/20 Zoom 03/24/20	<i>Data Mining & Genomics</i>	Executive Summary #3 due Readings: Unit VII (CH 30-33): <i>Education and Informatics</i>
#10 – 03/24/20 Zoom 03/31/20	<u>Guest Speaker: Telemedicine</u> <i>Technology Acceptance Model End User Acceptance</i>	Class Assignment #2 due Readings: Unit VIII (CH 34) <i>International Informatics Efforts</i>
#11 – 03/31/20 Zoom 04/07/20	<u>Guest Speaker (PressGaney)</u> <i>Lean & Six Sigma</i>	Canvas Discussion #3 due Readings: Unit IX (CH 35, 36): <i>The History and Future</i>
#12 – 04/07/20 Zoom 04/14/20	<i>Continuous QI</i>	Classroom Assignment #3 due
#13 – 04/14/20 Zoom 04/21/20	PRESENTATIONS	QUIZ #2 (Units V-IX) due FINAL PRESENTATIONS
#14 – 04/21/20 04/28/20	COMPREHENSIVE HESI	NO CLASS
#15 – 04/28/20 05/08/20		FINAL PAPER and PPTs due

*****Keep in mind that this outline is tentative and subject to change.**

(Revised) Calendar – NURS854 Advanced Informatics / Spring 2020

Week / Date	Lecture Topic	Assignment
#01 - 01/14/20	<i>Introductions</i>	Complete Course Assessment Review Course materials posted on Canvas
#02 – 01/21/20	<i>Nursing Informatics Go-live Checklist Ergonomics</i>	Readings: Unit I (CH 1-5): <i>Background and Foundational Information</i>
#03 – 01/28/20	<i>Electronic Health Record & Veterans National Informatics Strategic Plan, EMR Policy SWOT Analysis</i>	Canvas Discussion #1 due Readings: Unit II (CH 6-11): <i>Information Systems in Healthcare Delivery</i>
#04 – 02/04/20	<i>Clinical Decision Support Alert Fatigue Medical Home Model</i>	Executive Summary #1 due Readings: Unit III (CH 12-15): <i>Healthcare Informatics and Healthcare on the Internet</i>
#05 – 02/11/20	<u>Guest Speaker:</u> <i>Project Management</i>	Class Assignment #1 due Readings: Unit IV (CH 16, 17, 19, 20) <i>Project Management: Tool & Procedures</i>
#06 – 02/18/20	<i>Basic Interfacing Concept Web Design</i>	Executive Summary #2 due Readings: Unit V (CH 21-24): <i>Quality, Usability, and Standards in Informatics</i>
#07 – 02/25/20	<i>System Life Cycle</i>	QUIZ #1 (Units I-IV) due
#08 – 03/03/20	<i>CE- Normalization of Deviance Meaningful Use Quality Metrics</i>	Canvas Discussion #2 due Readings: Unit VI (CH 25-29): <i>Governance & Organizational Structures for Informatics</i>
03/10/20	SPRING BREAK	NO CLASS
03/17/20	SPRING BREAK - Extended	NO CLASS
#09 – 03/17/20 <i>Zoom 03/24/20</i>	<i>Data Mining & Genomics</i>	Executive Summary #3 due Readings: Unit VII (CH 30-33): <i>Education and Informatics</i>
#10 – 03/24/20 <i>Zoom 03/31/20</i>	<u>Guest Speaker: Telemedicine</u> <i>Technology Acceptance Model End User Acceptance</i>	Class Assignment #2 due Readings: Unit VIII (CH 34) <i>International Informatics Efforts</i>
#11 – 03/31/20 <i>Zoom 04/07/20</i>	<u>Guest Speaker (PressGaney)</u> <i>Lean & Six Sigma</i>	Canvas Discussion #3 due Readings: Unit IX (CH 35, 36): <i>The History and Future</i>
#12 – 04/07/20 <i>Zoom 04/14/20</i>	<i>Continuous QI</i>	Classroom Assignment #3 due
#13 – 04/14/20 <i>Zoom 04/21/20</i>	PRESENTATIONS	QUIZ #2 (Units V-IX) due FINAL PRESENTATIONS
#14 – 04/21/20 <i>04/28/20</i>	COMPREHENSIVE HESI	NO CLASS
#15 – 04/28/20 <i>05/08/20</i>		FINAL PAPER and PPTs due

***Keep in mind that this outline is tentative and subject to change.



Student Learner Support Services

- Student support services aim to assist students in achieving their learning outcomes, improve student satisfaction, and increase student retention through engagement (Meyer, 2018)
- Student learners, on and off campus, can utilize resources and services through informatics and technology such as:

Library Services

Access to full text databases, interlibrary loans, book borrowing, and resources such as:

- Top Sites Blog
 - Lists the top 10 free online libraries
- Nursing on the Net: Healthcare Resources You Can Use
 - Links to resources such as drug resources

Tutoring Services

- Online tutoring services include Tutor.com, Smarthinking, Inc., and Chegg Study
- Should be similar to services offered on campus in nature and pricing

Online Textbooks

Students can access textbooks online through distributors like these:

- Follett
 - Provides a service called CafeScribe that allows faculty and students to collaborate and review text together
- Chegg
 - Provides services to rent and buy textbooks, as well as resources for homework help
- VitalSource
 - Provides eTextbook and digital learning tools

Help Desk

- Services are needed to assist in technical issues that students will face throughout the course of the semester
- General help desk providers include BlackBeltHelp, Ellucian, and Blackboard, which are utilized by many universities
- 24/7 access is the goal

Academic Support

- Advising and career services provided through the use of web portals and video conferences

Administrative Services

- Services such as registration, financial aid, and admissions should be easily accessible online

Community Building

- Newsletters, podcasts, and cyber cafes can promote a sense of community for online learners

References

Meyer, I. (2018). Distance education: applications, techniques, and issues. In R. Nelson & N. Stagers (Eds.), Health informatics: An interprofessional approach (pp. 317-336). St. Louis: Elsevier.



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COURSE QUIZ #2 – Madison Moore (Total 10 pts)

Unit 6, Chapter 25

Read the case study on page 435

Answer the following questions:

1. Explain common issues related to use of EHR and healthcare fraud. (2 pts.)

Common issues include incorrect coding of services, such as coding for unnecessary services, services not performed, or unbundling services to charge more. Any instance in which a service is submitted as having been performed and was not performed is considered fraud.

2. Discuss how the proposed new **HER** could potentially facilitate healthcare fraud. (2 pts.)

If the medical practice was to take the hospital up on its offer, they would need to use the hospital's templates for order sets. Outpatient medical practices do not need to prescribe everything included in an in-patient order set. If the medical practice uses the hospital order set template, they run the risk of submitting codes for services that were unnecessary or unperformed. This would be fraud, and it would appear as though the practice was attempting to increase reimbursement by being dishonest.

Commented [BJW1]: Watch out for this autocorrection from "EHR" to "HER." Word always does this – very annoying!

Unit 7, Chapter 30

Read the case study on page 515

Answer the following questions:

1. Prepare a list of competencies, concepts, and/or skills that should be included in the educational preparation of graduates of the healthcare educational programs at both the undergraduate and graduate levels. Give examples that include an interprofessional approach to the practice of informatics. (2 pts.)

Competencies should include patient-centered care, evidence based-practice, interdisciplinary teams, quality improvement, and informatics. Regardless of the specialty, all students of programs at the universities should be trained in the use of databases for research purposes, the EHR in use at the associated medical centers, and any telehealth offerings from the medical centers.

2. Describe how informatics competencies could be incorporated into the clinical experiences of students. Be specific. For example, how should student access to Best Memorial Hospital's

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clinical information systems be developed? Who should provide the needed instruction for orienting each group of students? (2 pts.)

Each clinical student should be trained in using the EHR before their clinical time begins. A nurse informaticist and nurse educator could work together to create and teach an orientation session to groups of students. Student access could include the ability to write in charts with a co-signer. This makes sure that their notes are designated as written by students and may be interpreted accordingly.

Unit 8, Chapter 34

Read the case study on pages 593

Answer the following question:

1. Consider both your own goals related to the internship, as well as the ICN's goals. Combine these with your knowledge about global eHealth and your suitability for internship. What information would be critical for you to include in your application? (2 pts.)

I would include information about my background and education in healthcare and nursing informatics. I would present some ideas for achieving their goals and outline some tentative plans for the project. I would want to appear ready to jump right into their initiatives.

Commented [BJW2]: And you would know what these are? How?

Nelson, R. & Staggers, N. (2018). *Health Informatics An Interprofessional Approach* (2nd ed.). St. Louis, MO: Elsevier Mosby.