Course Title: NURS 773 (Sections 201 & 202)  
Information Systems to Support Clinical Decision-Making  

Credits: 3 Credits  

Prerequisites: Admission to a graduate program in nursing or consent of the instructor  

Faculty:  
Carol Klingbeil, DNP, RN, CPNP-PC  
Email address: klingbei@uwm.edu (Best way to reach)  
Office: CUN 641  
Office hours or phone conference: By appointment  

Interim Program Director:  
Julie Darmody, PhD, RN, ACNS-BC  
Clinical Associate Professor  
darmodyj@uwm.edu  
Office: Cunningham Room 647  
Office Phone: 414-229-5558  

Class meetings times and location: Online Only  

Office Hours: Email instructor to arrange a time  

Catalog Description: Basic concepts of nursing informatics are examined with emphasis on application to clinical practice to improve the quality of care.  

Course Description: As an introduction to nursing informatics, this course is designed to provide fundamentals in integrating nursing science with information and computer sciences to support practice and administrative decision-making. This course provides an overview of current information technology and health informatics applications used in clinical practice. Emphasis is on demonstrating the conceptual ability and technical skills essential to implement evidence-based practice recommendations and manage patient care data with clinical information systems. Current issues and challenges in using clinical information systems are also explored.
Course Objectives: Upon completion of this course, the student will be able to:

1. Understand basic technologies used to implement healthcare information systems and identify major health informatics applications common in health care organizations (DNP Essential A).
2. Examine health care data standards used for data collection and exchange within and across health care organizations. Examine challenges and opportunities involved in using healthcare information systems and electronic healthcare data to support practice and administrative decision-making (DNP Essentials A, B & C).
4. Provide evaluation and resolution of ethical and legal issues within healthcare systems relating to the use of information, information technology, communication networks, and patient care technology (DNP Essential D).
5. Explore available web resources supporting clinical decision-making and evaluate consumer health information sources for accuracy, timeliness, and appropriateness (DNP Essential E).


DNP Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care curricular elements and competencies include:

A. Design, select, use, and evaluate programs that evaluate and monitor outcomes of care, care systems, and quality improvement including consumer use of health care information systems.
B. Analyze and communicate critical elements necessary to the selection, use and evaluation of health care information systems and patient care technology.
C. Demonstrate the conceptual ability and technical skills to develop and execute an evaluation plan involving data extraction from practice information systems and databases.
D. Provide leadership in the evaluation and resolution of ethical and legal issues within healthcare systems relating to the use of information, information technology, communication networks, and patient care technology.
E. Evaluate consumer health information sources for accuracy, timeliness, and appropriateness.

Required Textbooks


Additional required readings also are assigned and available on Canvas course site.
### Evaluation/Grading

<table>
<thead>
<tr>
<th>Component</th>
<th>Due Dates</th>
<th>% of grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class participation and weekly postings</td>
<td>Ongoing</td>
<td>30%</td>
</tr>
<tr>
<td>Evaluation of consumer health information website</td>
<td>10/21</td>
<td>20%</td>
</tr>
<tr>
<td>Database Group Assignment</td>
<td>11/11</td>
<td>10%</td>
</tr>
<tr>
<td>Topic submission for approval Application Paper Step One</td>
<td>10/28</td>
<td>15%</td>
</tr>
<tr>
<td>Application Paper Step Two</td>
<td>11/18</td>
<td>25%</td>
</tr>
<tr>
<td>Application Paper Step Three</td>
<td>12/7</td>
<td>25%</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>100%</td>
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</table>

**Policy on Late Work:** Any extensions of due dates for assignments need to be negotiated with faculty **prior to due date**. Late assignments will result in a 5% deduction of the assignment grade for each day the assignment is late. Late assignments will not be accepted 5 days after the due date.

**Time Commitment:** The suggested minimum time commitment recommended for successful completion of this course is outlined below. Please keep in mind that additional time may be required for mastery of complex concepts and assignments.

- Course discussion: 3 hours/week Total: approximately 45 hours
- Reading (Text Book): 4 hours/week Total: minimum 56 hours
- Assignments: 2 hours/week Total: minimum 28 hours

In sum, you should expect to dedicate at least 9 hours per week to this course (135 hours across the entire semester). Keep in mind that this is a minimum time commitment; more time might be required to complete course assignments.

**Grading Scale:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Grade</th>
<th>Percentage</th>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>95-100</td>
<td>B</td>
<td>87-90</td>
<td>C</td>
<td>79-82</td>
</tr>
<tr>
<td>A-</td>
<td>93-94</td>
<td>B-</td>
<td>85-86</td>
<td>C-</td>
<td>77-78</td>
</tr>
<tr>
<td>B+</td>
<td>91-92</td>
<td>C+</td>
<td>83-84</td>
<td>D+</td>
<td>75-76</td>
</tr>
</tbody>
</table>

**Course Attendance Policy:** Participation is expected in the course discussion each week.

**Course Expectations**

**Classroom Climate and Expectations:** The professor will provide an environment that is conducive to learning and make the course a positive experience. This will include the professor calling on students to respond to questions and share comments in online discussions. Students and the professor in this course together all form a ‘community of learners’ that creates a respectful environment that embraces the diversity at UWM.
**Course and Instructor Evaluation:** At the completion of the course, students will have the opportunity to complete instructor and course evaluation forms. The activity will take place on the last day of class. Student anonymity is guaranteed. According to College policy, the course faculty may not see their evaluations until final grades are submitted.

**Online Course**

**Computer Skills**

You are expected to have relatively unrestricted access to a computer that can access the Internet (see minimal computer requirements below). You also need to have certain computer and technical skills to be a successful online learner. The hours per week of required computer-based and Internet-based activities will vary by course.

- You should be familiar with your computer's operating system.
- You should know the basics concerning opening, saving files, as well as sending files as an email attachment.
- You should backup your files on a weekly basis.
- You should know how to save files to a memory stick as one option for file backup.
- You should be familiar with using a web browser such as Internet Explorer or Mozilla or Safari. You should be able to use a variety of internet search engines such as Google, Yahoo, or Bing! and be comfortable navigating on the Internet.
- You should know how to use a word processing program like Microsoft Word and be able to open Adobe PDF files.
- You should know or learn how to use the UWM Course Management software.
- You should know how to use an e-mail program such as the UWM email program Office 365. You will communicate with your instructor and classmates via email and/or online Discussions. All UWM students are assigned an email account.

**Technology**

1. **Computer hardware:** Either a PC or Apple device may be used. It is recommended that you work from either a desktop or a laptop, as IPADS and phones are limited in their ability to engage with the UWM learning management system.


2. **Software:**
   - **Microsoft Office 365** is free to UWM students and contains the programs: Word, Excel and PowerPoint, OneNote, Publisher, Skype and OneDrive. To load this software onto your computer visit: [https://portal.office.com/OLS/MySoftware.aspx](https://portal.office.com/OLS/MySoftware.aspx)
   
   - **Microsoft Edge, Google Chrome or Mozilla Firefox** can be used as Internet Browsers.
   
   - **Adobe Acrobat Reader.** Visit the Adobe site to download the most current version for Free.

   - **Purchasing Additional Software:** Any student enrolled in our courses is entitled to deep discounts on the purchase of software. You can link to the student software purchase page for further information: [http://wiscsoftware.wisc.edu/wisc/school.asp?institution=1029](http://wiscsoftware.wisc.edu/wisc/school.asp?institution=1029)

3. **Internet Connectivity.** You must have access to the internet.

### Getting Help

- **University Information Technology Services (UITS) Help Desk:** The UITS Help Desk supports the campus community with core applications for both the Mac and PC platforms. They can be reached at either 414-229-4040, 1-877-381-3459 or help@uwm.edu. The Help Desk is available between 7am and 12:00 midnight.

### Commonly Visited Campus Portals

#### Office 365

- **Email:** At UWM, students, faculty and staff receive their email via Office 365, web-based suite. When you enroll at UWM, you automatically get a UWM email address. Your email address will be your PantherID@uwm.edu. This information should have been sent to you in your acceptance letter. If you can no longer access this information, contact the HelpDesk and they will be able to help you.

- **UWM Course Management System: Canvas LMS** is where you can view course syllabi, your grades and hold online discussions with classmates and the
professor. Your username and password are the same as your email username and password. For assistance with account, call the Help Desk at (414) 229-4040.

An Important Reminder

As an online student, you need to be aware that even the most sophisticated technology is not 100% reliable. Breakdowns can occur. For example, your individual PC might have a problem; the server which hosts the LMS may become slow or cut you off temporarily; your internet service provider may cut you off unexpectedly. Phoning the Help Desk (414) 229-4040 is a good first step. You will also want to be sure to communicate with your instructor if you have any problem that interferes with you completing course requirements or that detracts from your learning experience.

Assignments:

I. 30% Class participation and weekly postings

Each module is two weeks long. All students will post a concise well written and cited entry at least four times per module, at least twice the first week and twice the second week.

- **Week one:** Each student will make 2-3 postings depending on the module instructions for which questions to address. Postings should be approximately 250-300 words (2 points maximum). Due by Sunday 11:59 pm.
- **Week two:** The student will reply to at least two other student’s postings from the first week (2 points maximum). Closed at 11:59 pm on the following Sunday. Citations should be included as well. This is a good opportunity to bring in new references. Use APA style.

Discussion Board Rubric

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Meets Expectations</th>
<th>Meet Partial Expectations</th>
<th>Does Not Meet Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quantity of weekly contribution</strong></td>
<td>Complete required postings. Very Good. Concise. Postings were meaningful and multiple in nature.</td>
<td>Complete required postings. Too many and not concise. Rambled on too long and/or too often.</td>
<td>Did not complete the required postings. Minimal participation.</td>
</tr>
<tr>
<td><strong>Quality and Relevance of weekly contribution</strong></td>
<td>Excellent. Meaningful posting and focused on topic. Added value to the discussion and engaged in dialogue with peers.</td>
<td>Acceptable. Inconsistent focus – sometimes irrelevant discussion or chatter that added little value to the discussion.</td>
<td>Poor. Postings did not add value and/or failed to acknowledge peers’ discussion. Mostly communicated things that would have been better individual private email.</td>
</tr>
</tbody>
</table>
II. Evaluation of health information resources on the Internet—Due 10/21 11:59 PM (20%)

The students will identify a consumer website used in your specialty area of practice or for consumers in general. Through this assignment, students will evaluate the quality and usefulness of the Internet resource in supporting patients’ and family’s decision-making. Select a website or a set of pages from a website, rather than just a web-page. Write a brief report – maximum of 6 pages (including text and appendixes. Not including references).

3. Clearly identify your health-related topic of interest and relevance to health/illness, public interest (e.g. hospice care, smoking cessation, asthma, etc.) (1 point)
   Describe the site you selected to evaluate, include: (2 points)
   a. Name and URL
   b. Brief overview of the site (e.g. content area, author(s), and target audience)

4. Provide an evaluation of the site – this is the major focus of the paper
   a. Identify the set of criteria you used for your evaluation (list each criterion used and the source). See list of “Resources to Evaluate Internet Sites” on course site Content under Resources for suggested criteria. HON criteria used at a minimum (3 points)
   b. Apply the selected criteria to evaluate your website addressing them individually in the text of your paper. Present each criterion and how the website did or did not comply. (8 points)
   c. Evaluate the readability of the site using the SMOG readability index. (2 points)

5. Recommend and discuss improvements for the site based on your evaluation. You can go beyond the specific criteria used if you see a need for additional improvements such as visuals, layout, navigation, etc. (6 points)

6. APA format and grammar (3 points)
III. Database Group Assignment in Excel. Due 11/11 11:59 PM (10 %)
In a small group you will use a database in excel, analyze data using PIVOT Tables and Graphs and report them in an abstract. Graphs will be created to represent the data. **Assignment instructions and guidelines will be posted on the CANVAS course site.** Groups of 2-3 people will be assigned from within your discussion group and formulated based on prior Excel experience. You have current access to the complete Office 365 suite including Excel via UW-M. You can access it through your email if you look up in the left upper hand corner. Groups often communicate via Skype, Facetime or phone when working on the project. Start on this right away as challenges scheduling collaborations take time to figure out.

The goal of this assignment is to develop the following skills:

1. Using Excel for database management and analysis as this is a free and readily available tool in most clinical settings. Database manipulation is an informatics competency.
2. Creating charts and graphs as visuals for display of data.
3. Writing an abstract with a group for dissemination of a scholarly project.

This assignment will be graded as a group as follows:

1. Excel work addressing a set of questions for analysis and display of results (6 points)
2. Abstract completion according to guidelines. (3 points)
3. Brief self-reflection about the exercise/group work in the individual drop box. (1 point)

IV. Evidence-Based Review of a Health Information and Communication Technology (HICT) application to Support Nursing Practice (40%)

The purpose of this assignment is to apply evidence to critically discuss the potential for health information technologies and applications to: (a) support the delivery of safe, quality nursing care; (b) facilitate continuity of care; and (c) promote patients’ participation in healthcare.

This assignment has 3 steps:

Step 1: Due 10/28 11:59 pm in the drop box.

Select one health information and communication technology (HICT) application. **Submit the HICT application you selected in the drop box for instructor approval.**

Examples of applications could include:

a. Clinical Information System application (ONLY select one application, e.g. care planning; medication administration [eMAR], bar-coding; electronic clinical nursing discharge summary, clinical decision support tools, Sepsis screening Tool; care planning)
b. Tele-health application in home care (e.g., home tele-monitoring device for congestive heart failure; medication management devices for home)
c. Personal Health Record or patient web portals (e.g. My HealtheVet or EPIC MyChart)
d. Dataset applications (e.g. Long Term Care Minimum Data Set or Home care OASIS dataset in homecare)
e. Health Surveillance Systems (e.g. Wisconsin immunization data system; Prescription Drug Monitoring Program (PDMP))
f. Others - use your experiences or the textbook for other ideas

Select an application you can access so that you can adequately describe it in detail. If you are not able to access a site, select something you want to learn more about and that there is enough information in the literature for you to understand the application and to review it from an evidence based perspective. It is best to do a search to see if there is enough evidence in the form of research to support an evidence-based discussion in your paper. Take care not to rely on the manufacturer’s claims. You can select an actual commercial product (e.g. Kraken, iMPak Health’s medication monitoring system, EPIC web portal) or a type of product or application (e.g. a wireless medication management device for the home). Do not select a complete HIS or EHR that are both too large and complex to examine in this assignment.

**Step 2: Due 11/18 11:59 PM (15 %)**

After instructor’s approval of the HICT application you selected, write a paper (3-5 pages maximum without references) that introduces and describes the HICT application you selected for your project. You do not need to have many references for this part of the paper. That will come in the last part of the paper. Use the headings and subheadings below (APA format) to organize and write your paper that are identified below. Describe and discuss the:

a. Introduction: (2 points)
   a. Purpose of Paper
   b. Importance of HICT (for nurses and patients)

b. Type of application and purpose of application (and product name if applicable).
   Describe the different components of the application including how someone accesses it, different aspects of the application as someone uses it, reporting capability, resources within it, etc. (6 points)

c. Initial discussion about why this application has the potential to improve nursing practice. This can include brief introduction to the impact on quality and safety of patient care, care coordination and patient and family participation in care from your perspective (references are not needed). (4 points)

d. APA and grammar which means there is an intro, headings and subheadings for sections and a conclusion. Follow APA guidelines for formatting and use of headings (3 points).

**Step 3: Due 12/7 11:59 PM (25%)**

Using your Step 2 paper build on and write a final paper to demonstrate your understanding and knowledge, based on the evidence, about how your HICT can be used by nurses to improve and evaluate professional practice. Remember to reference and briefly describe the evidence in your paper that supports your ideas and discussion. You should revise your paper based on feedback from Step 2 and build support for the use of this HICT by reviewing enough evidence in this final paper. I would expect a minimum of 12 references in this paper. A number should be
higher level evidence in the form of research studies. Final paper total number of pages (not including references, appendix, and cover pages) = maximum of 12 pages.

Organize your paper using the following outline with headings and sub-headings to facilitate organization of your paper:

I. **Introduction:** Identify the purpose of the paper and why the topic is important. (2 points)
   a. Purpose of Paper
   b. Importance of HICT (for nurses and patients)

II. HICT application description: (3 points) **Improve this section based on initial feedback in Step 2 also paying attention to correcting errors and APA feedback.**
   a. Type of application and purpose of application (1 point)
   b. Description (2 points).

III. HICT application potential: Discuss and provide examples of how the application can be used by nurses and/or patients (individuals/families/communities) to improve the three following outcomes: (12 points)
   a. Application potential to improve overall nursing practice (3 points)
   b. Safety and Quality of Nursing (3 points)
   c. Continuity of Care and Care Coordination (3 points)
   d. Patient and Family Participation in Health Care (3 points)

IV. Opportunities and challenges for nurses’ use of the HICT application (2 points)
V. Conclusion (Brief paragraph summarizing key points.) (2 points)
VI. APA and grammar (4 points)

**ACADEMIC INTEGRITY:** Students are expected to demonstrate academic integrity in all course activities. Academic integrity requires honesty concerning all aspects of academic work including:
- Correct procedures for citing sources of information, words, and ideas
- Ways to properly credit collaborative work with project team or study group members
- Strategies for planning and preparing for examinations, papers, projects and presentations.

Students are encouraged to consult with faculty regarding any questions about appropriate behaviors to maintain academic integrity. Any violation of academic integrity will result in a zero on the assignment and may result in additional sanctions consistent with university policy. See UWM policies at: http://www4.uwm.edu/acad_aff/policy/academicmisconduct.cfm

**UNIVERSITY POLICIES:**
The UWM policies that govern this course can be found at: http://www.uwm.edu/Dept/SecU/SyllabusLinks.pdf

Additionally, please note the following:
1. **Inclement weather:** UWM student should contact the University at 229-4444 (UW-Parkside, 262-595-2345) or check the appropriate website to ascertain the status of class cancellation due to inclement weather. Even when classes are canceled, University offices and services remain available, unless the entire University is closed by the Governor. [http://www4.uwm.edu](http://www4.uwm.edu) or [http://www.uwp.edu](http://www.uwp.edu)

2. **Safety:** Safety techniques and strategies are described in College of Nursing Student Handbooks for undergraduate and graduate students distributed to all nursing students upon entering the program. Copies are available in the Office of Student Affairs. Information about UWM campus safety is found at: [http://www4.uwm.edu/current_students/student_services/safety.cfm](http://www4.uwm.edu/current_students/student_services/safety.cfm)

3. **Technology and Social media:** See student handbook