

Medical University of South Carolina

College of Nursing – Graduate Program

Course Number	NURSM 774
Course Title	Information Management for Advanced Practice Nursing
Semester	Spring 2002
Semester Hours	3
Room	CON 110
Prerequisites	Graduate standing or permission of the instructor
Course Coordinator	John Welton, PhD, RN Office: CON Room 513 Email: weltonj@musc.edu Phone: 843-792-4623 FAX: 843-792-2104
Web site	http://webct.musc.edu (WebCT site) http://www.musc.edu/~weltonj (Class notes, syllabus)
Class Schedule	Monday 4:00-7:00 pm
Office Hours	TBA or by prior arrangement

Course Description

The course is designed to develop information and technological competencies that facilitate the formulation of questions and analysis related to clinical and administrative decision-making and outcomes management.

Course Objectives

Upon completion of the course, the will be able to:

- Analyze concepts and principles of information acquisition, assessment, and management in a nursing and health care context.
- Utilize information for decision-making and outcomes management in patient care settings.
- Compare and contrast various technology and data resources needed for retrieving, storing, analyzing, managing, and communicating information for the delivery of nursing and health care.
- Use spreadsheets, statistical and data base applications to support clinical and management decision-making and outcomes management in the clinical and health care management setting.
- Demonstrate the process of “information construction” through the use of various technological methods such as problem identification, data collection, data organizing, data processing, analyzing, and synthesizing data.

Teaching-Learning Strategies

Lecture, discussion, interactive media, require reading, written assignments, tests, and student presentations

Required Text

Ball, M.J., Hannah, K.J., Newbold, S.K., & Douglas, J.V. (Eds.) Nursing Informatics. Where Caring and Technology Meet. New York: Springer, 2000 ISBN 0-387-98923-4

Lang, N.M. (Ed.) Nursing Data Systems: The Emerging Framework. Washington DC: American Nurses Association, 1995, ANA publication # NP-94, ISBN 1-55810-106-3

American Nurses Association Nursing Informatics Scope and Standards of Practice. Washington DC: American Nurses Association, 2001, ANA publication # NIP21

Note: text are available at the College of Charleston bookstore, web site:

<http://www.cofcstore.com/> or online via Amazon.com <http://www.amazon.com>

Recommended Text

Any Microsoft Office software guide (includes Word, Excel, Access) e.g., Microsoft Office for Dummies

Englehardt, S.P. & Nelson, R. (2001) Health Care Informatics. An Interdisciplinary Approach. St. Louis: CV Mosby ISBN: 0-323-01423-2

Evaluation Method

The following assignments are required for this class:

Assignment	% of Grade	Due Date	Note
Web page assignment	5	Jan 28	see Appendix A on p. 8
Spreadsheet assignment	10	Feb 4	see Appendix B on p. 10
Database assignment	10	Feb 25	see Appendix C on p. 11
Midterm multiple choice exam	15	Mar 4	to be taken in library computer lab
Scholarly paper of 15-20 pages	25	Mar 25	see Appendix D on p. 12
Class presentation	15	Apr 22 & 29	see Appendix E on p. 15
Student class participation	20	n/a	see Appendix F on p. 17
Extra credit		Ongoing	See Appendix G on p. 18

Note: If anyone has a disability that may require some modification of the seating, testing, or other arrangement needed to help with testing please contact me and we can discuss alternatives. Policies regarding make up exams, assignments, and exam reviews will be discussed in class.

Class policies

You are expected to attend all classes and you are responsible for all lecture material if absent. I will make lecture notes available on the web site. For exams, please see the student handbook for additional relevant information and policies. Note: unexcused exam absences result in 10 point deduction in grade. All missed exams must be taken within 1 week of scheduled exam and may consist of different test questions. Please review the Honor Code in the student handbook regarding expectations for conduct for this class. In particular, please note the school policies regarding cheating and plagiarism.

Class cancellation

Please consult your student handbook for relevant information regarding weather or other related cancellation of class. If a lecture is cancelled, I will review the material in the subsequent class but you will be responsible for all readings and assignments.

Table 1 Class Schedule

Class	Date	Links	Topic	Readings
1	Jan 14	Class 1 notes Class Exercise	First class <ul style="list-style-type: none"> • Class intro • Introduction to nursing informatics • Nursing informatics competencies Class Exercise: break into groups of 4-5 and produce a consensus list of informatics core competencies for beginning nurses, nurse managers, and Nurse Informatics Specialist. Group moderator to report findings to class.	(Graves & Corcoran, 1988); (Gassert, 2000; Graves & Corcoran, 1989)
2	Jan 21	Class 2 notes	Using software to enhance productivity <ul style="list-style-type: none"> • Word processing • Spreadsheet • Database applications • Presentation (Powerpoint) • Bibliographic databases 	Any Microsoft Office software guide (includes Word, Excel, Access)
3	Jan 28	Class 3 notes Web page project	Computer systems overview <ul style="list-style-type: none"> • Hardware & software overview • Computer systems and networks Guest lecture: TBA Class exercise: tear apart an old computer then put it back together again. <i>Web page due</i>	Class notes
4	Feb 4	Class 4 notes Spreadsheet project	Vocabulary, taxonomies, & nomenclature <ul style="list-style-type: none"> • Structured vocabulary • Nursing minimum data set Spreadsheet project due	(McCormick, 2000); (Hannah, 2000); (Ozbolt, 2000); (Ozbolt, Fruchtnicht, & Hayden, 1994); (Anonymous. 1995)
5	Feb 11	Class 5 notes	Structuring data <ul style="list-style-type: none"> • Relational database principles • Database structure 	Class notes
6	Feb 18	Class 6 notes	Finding information <ul style="list-style-type: none"> • Online searching • Internet and World Wide Web Class meets in the Health Sciences Library. Guest lecture Bob Poyer	(Newbold, 2000a); (Lewis & Friedman, 2000)
7	Feb 25	Class 7 notes Database project	Capturing data <ul style="list-style-type: none"> • Point of care systems • Healthcare information systems Database project due	(Hughes, 2000); (Harsanyi et al., 2000)
8	Mar 4	Exam review	Presenting findings <ul style="list-style-type: none"> • How to present data, public presentation styles, use of presentation software • Midterm exam 	Exam via computer in health science library
Mar 11			Spring break – no class	
9	Mar 18	Class 9 notes	Designing and implementing info systems <ul style="list-style-type: none"> • Information system selection 	(Mills, 2000); (Happ, 2000); (Jenkins, 2000); (Warnock-

Class	Date	Links	Topic	Readings
			<ul style="list-style-type: none"> • Information system implementation • Project Management • Interfacing data: usability concepts Guest lecture: Mary Linder and Sherry Church, Trident Med Ctr nursing info system	Matheron & Hannah, 2000); (Staggers, 2000)
10	Mar 25	Class 10 notes Paper instructions	Processing and analyzing data <ul style="list-style-type: none"> • Outcome analysis • Data analysis & data mining • Quality measurement tools Scholarly paper due	(Andolina, 2000); (Abbott, 2000); (Welton & Jarr, 1997); (Welton, Meyer, Fakhry, & Jarr, 2000; Welton & Halloran, 1999)
11	Apr 1	Class 11 notes	Decision support <ul style="list-style-type: none"> • Management information systems • Patient classification systems and nursing workload measurement Class exercise: break into groups and design a patient classification system. Moderator report to class.	(Shamian & Hannah, 2000); (Welton & Halloran, 2000)
12	Apr 8	Class 12 notes	Telehealth and remote interface to data <ul style="list-style-type: none"> • Principles and techniques • Populations • Innovations 	(Newbold, 2000b); (Skiba & Barton, 2000)
13	Apr 15	Class 13 notes	Using the computer to educate <ul style="list-style-type: none"> • Computer assisted instruction • Using the internet to educate and inform 	(Edwards & Drury, 2000)
14	Apr 22		Student presentations <ul style="list-style-type: none"> • schedule TBA 	Class handouts by presenters
15	Apr 29		Student presentations <ul style="list-style-type: none"> • schedule TBA • PACE evaluations 	

Reference List

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- Edwards,M.J., & Drury,R.M. (2000). Using computers in basic nursing education, continuing education, and patient education. In M. J. Ball, K. J. Hannah, S. K. Newbold, & J. V. Douglas (Eds.), Nursing Informatics: Where Caring and Technology Meet. (pp. 49-68). New York: Springer.
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- Harsanyi,B.E., Allan,K.C., Anderson,J., Valo,C.R., Fitzpatrick,J.M., Schofield,E.A., Benjamin,S., & Simundza,B.W. (2000). Healthcare information systems. In M. J. Ball, K. J. Hannah, S. K. Newbold, & J. V. Douglas (Eds.), Nursing Informatics: Where Caring and Technology Meet. (pp. 264-283). New York: Springer.
- Hughes,S.J. (2000). Point-of-care information systems: State of the art. In M. J. Ball, K. J. Hannah, S. K. Newbold, & J. V. Douglas (Eds.), Nursing Informatics: Where Caring and Technology Meet. (pp. 242-251). New York: Springer.

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Appendix A Web Page Assignment

Create a simple personal web page on the WebCT homeroom site. The following will be included on the page:

- a brief introductory bio sketch and digital picture of yourself
- a brief description of nursing informatics
- an email address that a viewer can respond
- a set of 5 nursing informatics or health care related links
- grammar and spelling are at graduate level work, use APA format for references if included

This is a relatively basic assignment to familiarize you with basic web page function and design. There is a tutorial on the WebCT site to help you create the page.

Evaluation

Grade	Criteria	Examples
A 4.0	Substantially exceeds minimum requirements specified above	<ul style="list-style-type: none">• adds several additional pages relevant to nursing informatics• provides substantial annotated bibliography included in web page
B 3.5-3.9	Meets minimum requirements specified above	<ul style="list-style-type: none">• format, font size, and coloring are acceptable• links appropriate and work
C 3.0-3.4	Does not meet 1 or more of the minimum requirements specified above	<ul style="list-style-type: none">• multiple grammar and/or spelling mistakes• poor formatting, no links or dead links
<C < 3.0	Substandard or essentially poor submission	<ul style="list-style-type: none">• does not meet several of the minimum requirements• sparse, minimalist page design
F 0	Assignment not completed	<ul style="list-style-type: none">• not done/completed

Appendix B Spreadsheet Assignment

Suggested reading: any MS Office 2000 or Excel 2000 text. (e.g. Dummy's Guide to Microsoft Office)

1. Create a simple spreadsheet using the following data:

Last Name	First Name	SSN	Title	Current Salary FY02	Projected Salary FY03	Projected Salary FY04
Adam	Melinda	123-45-6789	RN	38,300		
Baker	Asha	234-56-7890	LPN	28,100		
Charles	Veronica	345-67-8901	RN	54,600		
Dunkirk	Ruby	456-78-9012	RN	45,400		
Edwards	Thomas	567-89-0123	RN	44,550		
Your name		a SSN	RN Mgr	Your salary		

2. Create formulas to project a 5% salary increase for each nurse for FY03 and 3% increase for FY04 over FY03 (assume staff will remain stable)
3. Graph a salary comparison depicting the total current salaries for all staff (total unit staffing expense) and the total projected salaries for staff for FY03 and FY04. This should be a line graph with the X axis showing FY02, FY03, FY04 and Y axis showing total staff salaries in dollars formatted as xxx,xxx (250,000). Use appropriate headings and label the x and y axes and include a title for the graph
4. Your unit has a surplus of 15,000 at the close of FY01 and you are directed to distribute this as a merit bonus to your staff. Add a column to your spreadsheet titled Bonus FY01 and develop a plan for distributing this money across your staff – include the amount distributed in this column. You may use whatever strategy you see fit as long as the entire sum (total) of all bonuses equal 15,000.
5. Submit:
 - 1 worksheet with all computations including a totals row (total salaries, count of personnel). Note, you must use formulas to calculate these numbers
 - 1 worksheet showing the formulas used to calculate projected salaries and total (top line menu, options, click on box “show formulas”)
 - 1 graph as noted above

Note: the submitted material must look professional with titles, formatting and spelling correct. Assume you are submitting this to your chief nurse executive and board.

Appendix C Database Assignment

Construct a database in Microsoft Access based on the following scenario:

You are a nurse practitioner at a school based clinic. The federal grant that funds this clinic and those at several other schools requires you maintain statistics on students, patients, and the overall health outcomes of this population. You will need to create a small database to track students, episodes of care, treatments, and outcomes of treatments. To do this, you will need the following tables:

1. Student – contains demographic information of each student seen in the clinic
2. Episode – the presenting episode of care or visit to the clinic including chief complain, assessment, symptoms, and outcomes
3. Treatments – treatments during each episode

You will need the following reports:

1. Number of students seen each month
2. A break out of the types of episodes of care
3. The types of treatments you typically administer
4. Construct a database to address these needs

Table 2 Database Assignment Grading Criteria

Grade	Criteria
A 4.0	<ul style="list-style-type: none"> • Forms: are well laid out, functional, have functional buttons to close form • Tables: all significant fields are in table, field level validation is in place, 1:N references are in place • Queries: all appropriate queries are attached to forms and reports, totals queries are accurate (e.g., monthly student visit totals) • Reports: all relevant reports are included, they are well laid out and does not use default layout scheme • Switchboard: is present at database startup for forms and reports
B 3.5-3.9	<ul style="list-style-type: none"> • Forms: all forms are present, may use generic form layout, all form fields are linked to table • Tables: all significant fields are in table, 1:N references are in place, • Queries: all appropriate queries are attached to forms and reports • Reports: all relevant reports are included, may use default layout scheme • Switchboard: is not present
C 3.0-3.4	<ul style="list-style-type: none"> • Forms: some major forms are missing or not working • Tables: some tables are missing or important field in the tables are missing, no 1:N referencing • Queries: as per tables • Reports: some reports are missing or not properly working • Switchboard: is not present
< C < 3.0	<ul style="list-style-type: none"> • Forms: major problems or nonworking or poorly developed forms • Tables: important tables missing or serious design flaws in tables that make the database nonfunctional • Queries: either missing or seriously flawed/not working • Reports: missing or not working • Switchboard: is not present

Appendix D Scholarly Paper

You will write a major scholarly prepared paper on a relevant topic of the class (Table 4). Please seek my approval for your topic by the end of the 3rd week of class. The body of the paper should be between 12 and 15 pages plus references. You will conduct a thorough literature review of the topical area using the skills learned in the Health Science Library lecture. I expect to see at least 8 to 10 peer reviewed references (and certainly you can exceed this as necessary). The body of the paper should be as follows:

1. Introduction and problem statement (1-2 pages)
2. Review of the literature (3-5 pages)
3. Discussion of problem and solution (3-5 pages)
4. Future considerations (1-2 pages)
5. Summary (1 page)
6. References (as needed)

Table 3 Scholarly Paper Grading Criteria

Area	% of grade	Criteria
Content	40	relevant to topic, concise, and addresses major areas without superfluous, extraneous, or irrelevant material
Writing style	20	submission is well written, style and grammar appropriate to graduate school
APA Style	20	written in APA style (4 th edition), references are appropriately cited and relevant to topic
Format	20	typed, page margins 1 inch top/bottom/side, font is courier or courier new, pitch is 12 point, see APA manual for style of title page, tables, figures, etc. Headings as detailed above. Note: I will return any submission unread that does not conform to these standards.

Note: In the past, I have returned papers to students with intent that you can correct the issues I raise in the grading process to 1. improve your grade, 2. use this as a learning experience to improve your writing skills. I will give each student 2 weeks to revise and resubmit the manuscript. I take the paper assignment seriously and typically spend a lot of my time guiding and critiquing your submission. My ultimate goal is to identify areas in your writing that you can improve and help you better articulate your thoughts on paper. I expect graduate level writing skills as outlined above. There are a number of resources available on campus to help you improve your academic writing skills. Please see me for further details. The best way to succeed in the scholarly paper assignment is to plan well ahead of the deadline and begin outlining, seeking references, and writing the paper weeks before it is due.

Table 4 Scholarly Paper Approved Topics

Topic area	Examples
Using information technology to enhance productivity	<ul style="list-style-type: none"> • design, implementation, and/or evaluation of systems such as: patient acuity; outcomes management; scheduling or staffing system; laboratory or pharmacy systems; etc. • use of common computer software tools to aid clinical care or management of nursing systems
Vocabulary, taxonomies, nomenclature	<ul style="list-style-type: none"> • Evaluate the nursing minimum data set and discuss whether it is applicable today • Compare, contrast two or more vocabularies • Discuss background and implementation of a nursing vocabulary in a clinical setting (case study or personal experience)
Structuring data	<ul style="list-style-type: none"> • Discuss the structure of a clinical or management database and relate to relevant literature • Compare paper versus electronic data collection, use case studies or actual experience and relate to relevant literature
Capturing data	<ul style="list-style-type: none"> • Evaluate various innovative methods of capturing patient care data in the home or other nontraditional nursing settings • Review relevant literature on point of care systems in the nursing setting
Using the internet and web technologies to educate	<ul style="list-style-type: none"> • Explore the potential of using the web and internet to educate patients and their families and discuss ways to evaluate the proliferation of sites – good, bad, ugly • Describe how to use the web/internet or other distance education technologies to educate and maintain contact with nurses in rural area
Processing and analyzing data	<ul style="list-style-type: none"> • Review existing means of analyzing data in the clinical or patient care setting to provide the best and most timely output • Explore the potential of real time information systems in either a clinical or management setting and describe the relative improvement in decision making with timely information
Telehealth	<ul style="list-style-type: none"> • Propose future telehealth technologies to provide nursing and health care to remote populations. Explore emerging technologies and relate how these technologies can be leveraged to provide improved patient outcomes • Discuss how telehealth and other information technologies can be used in a major biological, chemical, or nuclear emergency mass casualty disaster.

Topic area	Examples
Other appropriate topical areas	<ul style="list-style-type: none">• Innovative uses of technology in the patient care area• Data mining or other data analysis techniques such as neural networks or decision support systems and their effect on patient care or the management of that care• Health information security, confidentiality, or privacy and how the new HIPAA legislation effects nursing/health care• Novel ways to collect, disseminate, or otherwise process health care data that improves care delivery and/or reduces costs• New ways of discovering or disseminating knowledge related to patient care or the management or delivery of that care• How to use health care information to change health care policy at the local, state, national, international level of government with special focus on delivery of nursing care

Appendix E Class Presentation

You will present the material from your scholarly paper in a public setting. Overall, this exercise is designed to integrate the knowledge you have gained in this class and allow you to demonstrate your public speaking abilities. You will prepare a 10 to 15 minute presentation, develop a MS Powerpoint slide presentation, and present the materials in class to your fellow students. You will be evaluated using the following objectives and criteria in Class Presentation Evaluation Sheet

Have two students evaluate your class presentation and faculty will evaluate each presentation as well. The grade will be the average of all three evaluations. Circle the criteria that best meets each objective and write additional comments as necessary. Estimate the grade for each objective and then the final grade for the presentation in the spaces below.

Table 5.

Objective:

1. demonstrate mastery of a topic relevant to class through presentation to students and faculty
2. demonstrate understanding and use of software (MS Powerpoint) and hardware for use in public presentations
3. Show effective public presentation skills

Class Presentation Evaluation Sheet

Have two students evaluate your class presentation and faculty will evaluate each presentation as well. The grade will be the average of all three evaluations. Circle the criteria that best meets each objective and write additional comments as necessary. Estimate the grade for each objective and then the final grade for the presentation in the spaces below.

Table 5 Presentation grading sheet

Student: _____

Range	Objective 1	Objective 2	Objective 3	Comments/Grade
A. 4.0	<ul style="list-style-type: none"> Superior understanding of topic and all relevant literature 	<ul style="list-style-type: none"> At total ease with software and hardware, superior screen presentation design, no animation or other distracters 	<ul style="list-style-type: none"> Makes good eye contact, tempo and diction excellent, minimal ums/ers, excellent body language, well dressed 	
B. 3.5 – 3.9	<ul style="list-style-type: none"> understands basic essentials of topic, quotes core articles 	<ul style="list-style-type: none"> can work with software with minimal outside help, generally good screen design or use of some distracting animation 	<ul style="list-style-type: none"> makes some contact with audience, some ums/ers, voice diction, tempo, pitch adequate to convey material, casual dress 	
C. 3.0 – 3.4	<ul style="list-style-type: none"> rudimentary understanding of topical area, may have some conceptual, factual mistakes 	<ul style="list-style-type: none"> needs assistance with software or shows minimal knowledge of use of software/hardware, weak slide design 	<ul style="list-style-type: none"> generally has weak interaction with audience, may show nervousness or other weak presentation behaviors, dress not appropriate to setting 	
D/F < 3.0	<ul style="list-style-type: none"> obvious poor understanding of topical area or several major conceptual or factual errors 	<ul style="list-style-type: none"> does not know how to use software, presentation uses minimalist approach to design or poor technique 	<ul style="list-style-type: none"> major problems with presentation style, difficult to understand, stereotyped presentation behaviors, poor speech, obviously unprepared for presentation 	
Grade	_____	_____	_____	Presentation _____

Appendix F Class Participation Grading

I will use the following criteria to assign your class participation grade. Some of these items are subjective and discretionary. I urge you to consider the various behaviors of excellence noted below and make your best effort to emulate and exceed these expectations in order to maximize your grade, as well as your potential for learning in this class.

You will need to fill out this form for your self evaluation and turn this in to me on the last day of class. I will use this to guide my grading. Please indicated in the evaluation section your behaviors that meet the criteria in the selected grade category that you feel you met. Please be honest with this self evaluation and do not over (or under) evaluate class performance.

Student: _____

Grade	Criteria	Evaluation
A. 4.0	<ul style="list-style-type: none"> • actively leads and contributes to class discussions • attends nearly all classes • demonstrates mastery of required readings and class material through insightful comments and questions • does not dominate discussion, provides encouragement to fellow students, is considerate of class time • goes beyond class material to bring in new material relevant to the class 	
B. 3.0 – 3.9	<ul style="list-style-type: none"> • contributes to class discussions • attends classes (only a small number of excused absences) • is familiar with required readings and class material • initiates some class discussion • meets minimum requirements for materials relevant to the class 	
C. 2.0 – 2.9	<ul style="list-style-type: none"> • makes some useful comments during semester • no more than 25% of classes missed • shows some understanding of required reading through contribution to class discussion • makes an effort to interact with other students • participates in group activities 	
F < 2.0	<ul style="list-style-type: none"> • makes little or no effort to contribute to class discussions • misses many classes or has more than 1 unexcused absence • does not demonstrate understanding of required readings and class material or otherwise show that he/she has read relevant material prior to class • shows little or no interaction with other students or shows behaviors not appropriate to graduate education setting such as making inappropriate comments, dominating class discussion at expense of other students, is rude or disrespectful to other students or faculty, disrupts class or otherwise harms learning environment • makes little or no effort to bring in new material relevant to the class 	
		Proposed grade: _____

Appendix G Extra credit assignments

Overview:

I will make the following opportunities available to all class members on a first come, first served approach. The allotted points will be added to your final grade if you successfully complete the assignment. I ask for your commitment and followup. Class grades are reported at GPA from 0 to 4.0. The assigned added credit is in 0.1 allotments which roughly equates to a 1% point (on a 0-100 scale) increase in your grade.

Opportunity 1: I will take a maximum of 2 students to help me with web development for this course as well as an undergraduate Pathophysiology course I am also teaching. You will be immersed in web development tools and work with me to discover the best ways to leverage existing technology and software to provide the most effective means of course web design and content dissemination.

Extra credit allowed	Criteria
0.2 to final GPA	<ul style="list-style-type: none">• Demonstrates increasing mastery of tools and techniques of web design and substantially contributes to the output products• Works independently with little guidance and consults with faculty frequently during the semester on progress
0.1 to final GPA	<ul style="list-style-type: none">• Makes some contribution to web site design• Needs substantial guidance
No credit	<ul style="list-style-type: none">• Exerts minimal effort to participate in project• Does not keep in contact with faculty• Does not contribute to own learning

Opportunity 2: Design and help implement a database for the MUSC CON school based clinic project. This requires you have a *thorough working knowledge* of MS Access database design. There are several school based clinics scattered throughout Charleston county using nurse practitioners. There is currently no computerized system to track student encounters or outcomes. You will work with the program director and nurse practitioners to produce an IT solution to this problem. The real challenge is to collect data from the several clinics and efficiently centralize the data to allow cross school analysis. I will allow up to 0.3 GPA point to final grade - please see me for further details if you are interested. Note, if you take on this project, you may substitute the final output products for the class database and spreadsheet assignment.

Opportunity 3: I will be open minded for any innovative informatics related extra credit project you have in mind. Please consult with me within the first two weeks of class and I will assess your interest, suitability of the project, relevance to nursing/health care, and my ability to assess your learning objectives and contribution to final output product. Variable 0.1 to 0.3 credits added to final GPA depending on scope of project.

Note: you may use these extra credit projects as subject matter for your scholarly paper and class presentation.