MONTANA STATE UNIVERSITY - BOZEMAN  
COLLEGE OF NURSING/ COLLEGE OF ENGINEERING  
NURS 608/EIND 506: Design of Healthcare Delivery Systems  
Spring 2014

Credits: 3 credit lecture

Delivery Methods: Synchronous: Videoconference or Teleconference  
Wks 3, 7, 11, 14  
Time: Tuesdays, 5-7p, Wednesdays, 5-6p,

Asynchronous: D2L  
Wks 1-16

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Pre-Requisite Courses: N604 (for nursing students), EIND 458 (for IE students), or instructors’ permission  
Students are encouraged to contact the instructors as the need arises (e.g., phone, email, D2L)

Course Description:  
The purpose of N608/EIND506 is to introduce the role of Clinical Nurse Leader (CNL), Doctor of Nursing Practice (DNP) and Industrial (or systems) Engineer (IE) in healthcare; examine the major systems within healthcare organizations which affect care delivery; and provide experience and tools for working effectively in interprofessional teams to redesign healthcare delivery systems. This interprofessional course targets nursing students pursuing certification as a CNL or DNP, and IE students who intend to work in the healthcare sector. Students will learn strategies for analyzing and improving processes, coordinating interdisciplinary healthcare teams, enhancing healthcare quality management, and reducing health risk through medical error elimination.

Course Objectives:
1. Examine the roles of the Clinical Nurse Leader, Doctor of Nursing Practice and Industrial Engineer as each relates to organizational leadership, effective advocacy, and the delivery and integration of care.

2. Evaluate core hospital systems which drive the quality, timeliness, and cost of care using systems engineering concepts and tools.
3. Examine issues related to coordinating and leading healthcare teams in collaborative problem-solving.


5. Describe interrelationships among clinical information systems, communication accuracy, error reduction, and healthcare system operations.

6. Assess internal and external forces including cultural factors that affect healthcare delivery across various settings.

**Course Texts:**

**Required:**


4) Assigned Web readings.

**Recommended:**


**General Course Plan**

This course is designed to promote exploration and reflection of content relevant to the CNL, DNP and engineering roles in the healthcare delivery system, and is delivered using primarily asynchronous format (D2L). Content has been divided into learning circles that span 1-2 weeks. Collay, Dunlap, Enloe and Gagnon (1998) describe learning circles as small communities of learners who come together to support each other in the process of learning. This collaborative approach to learning is an especially effective way to build the community of learning in the virtual classroom. The learning circle provides the structure that will enable students and faculty to examine selected content and issues introduced in this course and share their knowledge with other students through guided discussion and reflection. Each learning circle includes an introduction of the topic with learning objectives, inquiry questions that guide students into the literature, selected readings, discussion activities, post discussion activities, strategies for linking learning to daily life, and suggestions for additional reading.
Assignment Guidelines:
The assignments for this course are designed to help students achieve the course objectives. Criteria for each of the assignments are described below. Grading will be based on the percentage found in the parentheses () in the section below. All written work is to be prepared in APA format, 6th edition. Assignments are due on the date and time specified in the class calendar. Late papers will not be accepted without prior consent of the faculty.

1. Class participation (D2L TC) (20%)
   Students are expected to be actively engaged in all synchronous and asynchronous discussions and activities guided by the learning circles. Display of preparation through reading / thinking, quality and quantity of participation, and timely posting of assignments provides the basis for evaluation. Peer review will also be considered in the evaluation.

2. Annotated Bibliography (25%)
   The annotated bibliography is a synthesis of literature related to the objectives of this course that will be developed over the course of the semester. The bibliography should include a description of at least two (2) peer-reviewed articles published within the last 5 years for each of 5 assigned topic areas (a total of 10 articles/bibliography). Each topic will be assigned in a selected a learning circle.

3. Oral presentation of CNL, DNP and IE Roles in healthcare (10%)
   Students will develop and present information about the role of the CNL, DNP and IE in health care settings. The purpose of the presentation is to enhance awareness of the CNL, DNP, and IE roles and potential outcomes of the student’s chosen role. Objectives, teaching methods and session evaluation results will be posted as an attachment in the discussion topic for this activity within one week of the presentation. Students are encouraged to work in groups to accomplish this assignment.

4. Healthcare Improvement Project (45%)
   Students will work in interprofessional teams to analyze and evaluate a core hospital delivery system over the course of the semester. Teams will develop an improvement proposal based on this analysis that includes in-depth description of the problem, an improvement goal, an evidence-based strategy that can be used to achieve the goal, and a description of the PSDA cycle of improvement that would be used to test the selected strategy. The development of the proposal will allow students to apply the methods used to ensure a rigorous, systematic and collaborative problem-solving approach for process improvement and the metrics used to evaluate effectiveness. Students will utilize selected tools and concepts covered in the course to complete this assignment.

Students will submit a written project overview that includes the membership of the team, a description of the microsystem and selected process to be improved, project objectives, and letter of support by the managing director(s) of the area(s) potentially impacted by the proposed project. The brief is due by the 6th week of the semester for faculty approval. When approved, the faculty will also provide specific individualized evaluation criteria that will be used to guide evaluation of the work. The complete description of the project will be submitted to dropbox in D2L by 4/20/14.

Evaluation:

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Weight</th>
<th>Points</th>
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<tbody>
<tr>
<td>Participation (Learning Circle Discussions)</td>
<td>20%</td>
<td>40</td>
</tr>
<tr>
<td>Annotated Bibliography</td>
<td>25%</td>
<td>50</td>
</tr>
<tr>
<td>CNL/DNP/IE Role Presentation</td>
<td>10%</td>
<td>20</td>
</tr>
<tr>
<td>Healthcare Improvement Project</td>
<td>45%</td>
<td>90</td>
</tr>
<tr>
<td>Total points</td>
<td>100%</td>
<td>200</td>
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Grading:

<table>
<thead>
<tr>
<th>Grading</th>
<th>Percent</th>
<th>Points</th>
<th>Grading</th>
<th>Percent</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>90 - 100%</td>
<td>180-200</td>
<td>C</td>
<td>70 - &lt; 80%</td>
<td>140-159</td>
</tr>
<tr>
<td>B</td>
<td>80 - &lt; 90%</td>
<td>160-179</td>
<td>D</td>
<td>Below 70%</td>
<td>&lt;140</td>
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Course Policies:
Assignments:
Participation in the D2L discussions, oral presentation of the CNL/DNP/IE role and submission of the annotated bibliography sections and proposal are required coursework. Failure to complete any of these assignments will result in a failing grade for the course.

Assignments are due no later than midnight on the designated date. The grade will be lowered on all assignments by 5% per day late. A maximum of 10% reduction in grade will be taken for errors in grammar, style, spelling, and documentation of all written work.

All academic papers must be formatted using APA format (6th edition) unless otherwise noted on the grading criteria. For information or guidance on APA format:
- Some reference copies of this text are available in the MSU libraries and Colleges of Nursing.
- Students may also consult the APA website at: http://www.apastyle.org

Plagiarism:
The use of another student's work, or the incorporation of work not one's own without proper credit, may constitute course failure. Please be careful to cite all of your references within the text of your scholarly papers to diminish the risk of plagiarism.

Class Participation:
Attendance in synchronous and asynchronous discussions is expected and monitored per MSU policy. Students are responsible for content covered in all required readings AND discussions. Participation includes completing synchronous and asynchronous D2L activities and participating actively in all discussions. Independent work is required for completion of this course. While the sharing of information through joint discussion and study is encouraged, the submission of another’s work as one’s own is not acceptable. Evidence of academic misconduct on the part of the student may warrant a failure for the course as well as possible dismissal from MSU. This policy is outlined in the Student Conduct Code located at: www.montana.edu/wwwfachb/policy/acguide.html

Students are responsible for their own learning. Faculty act as mentors and facilitators in the learning process. The student must be an active participant in the learning process in order for learning to occur. Collaborative learning takes place by thoughtful analysis, synthesis, and discussion of class assignments, relevant previous experiences, and literature review.

D2L Expectations:
This course is computer-enhanced using D2L. The rationale for enhancing the course in this way is to permit students to interact with each other asynchronously regarding the course content and facilitate communication and evaluation between instructor and students.

It is assumed you are proficient with D2L, tutorials are available at http://eu.montana.edu/d2l/help/learner_video/
Additional help is available at http://eu.montana.edu/d2l/help/learner_help/. Any difficulties you may have accessing D2L should be submitted to the D2L helpdesk. One of the course instructors should also be notified when access to D2L is problematic to ensure continued participation and timely submission of assignments.

All course email from the instructor will be sent via D2L. Students should check their D2L email during the week, before each class, and for any required D2L discussion activities. Students may contact the instructor regarding course-specific questions via D2L. However, it is strongly encouraged that students communicate emergent information (e.g., regarding absences, delayed submission of assignments) by phone to the
instructor where voice mail is available. Grades will be posted to individual students via D2L. New Learning Circles will be posted on Mondays on D2L throughout the semester.

Respect for the opinions and comments of others should be demonstrated at all times. Students are to use established confidentiality precautions during all discussions, including D2L discussions. Meaningful responses are those which are thoughtful and accurate, seek clarification, offer a different perspective, provide supporting data, expand on the discussion, etc.

Confidentiality Guidelines for Written Assignments
The same rules governing confidentiality in your undergraduate and graduate clinical courses or practice apply in this course. Do not use proper names of any kind and use initials of clients to protect confidentiality. You do not need to falsify information but speaking in generalities such as “lives in a rural western town” or “works for a fast food restaurant”; “admitted to an acute care mental health facility” will protect identity. Do not use specific dates, instead state patient’s length of stay such as “on day 3 of admission”. Avoid use of patient’s birthday; instead simply report the age or a general age such as “teenager or male in his 40’s”. Ask yourself the question “Is it important that this specific information be included in the paper or discussion to make my point clear?” Any information that would allow the listener/reader to track information to a person is considered a breach of confidentiality. Failure to adhere to this on graded work may result in loss of points of a full letter grade. Failure to adhere in work graded satisfactory/unsatisfactory may result in an unsatisfactory for the assignment.

Course Content
Introduction: Forces influencing healthcare delivery systems in the US
  Culture of Safety  Medical Error
  Demographic challenges  Nursing Shortage
  Affordable Care Act  Institutional culture

Structure of the US Healthcare System
  Interprofessional Team Roles  Horizontal Leadership
  Scope of Practice/Delegation  Interprofessional care planning
  Collaborative problem-solving  Teamwork
  Lateral and Vertical Integration of Care  Patient Flow
  Organizational structures/departments  Reimbursement Strategies
  Admissions processes  Regulation/Documentation
  Medication delivery systems  Billing / revenue cycle
  Supplies management  Staff scheduling systems

Healthcare Systems Re-engineering
  Systematic problem-solving  Process mapping
  Data visualization and analysis  Flow and work design principles
  Risk assessment and analysis  Informatics/Outcomes Management
  EMR Data Mining

The Course Project is also developed and implemented over the semester, culminating in a presentation of the written work during week 14.
<table>
<thead>
<tr>
<th>Date</th>
<th>Course Content</th>
<th>Key Project Dates and Deliverables</th>
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</table>
| Week 1     | 1/8-1/12  
Course Introduction  
LC #1: Forces Influencing Healthcare |                                                                                                     |
| Week 2     | 1/13-1/19  
LC #1 (cont): Medical Error                                                   |                                                                                                     |
| Week 3     | 1/22-1/26  
LC #2—Interprofessional Team Roles, Leadership & Collaboration           | Course Project Meeting #1  
Course Project Orientation, Team Assignments  
1/21 5-7pm, 1/22 5-6pm |
| Week 4     | 1/27-2/2   
LC #3—The Structure of Care & Care Planning and Transitions                 |                                                                                                     |
| Week 5     | 2/3-2/9    
LC #4—Regulatory and Reimbursement Systems                                    |                                                                                                     |
| Week 6     | 2/11-2/16  
LC #5—Healthcare Delivery Processes                                          | Submit Written Project Overview by 2/16                                                             |
| Week 7     | 2/17-2/23  
LC #6—Systematic Problem Solving                                              | Course Project Meeting #2  
Present Project Overview  
2/18 5-7pm, 2/19 5-6pm |
| Week 8     | 2/24-3/2   
LC #7—Process Mapping                                                          |                                                                                                     |
| Week 9     | 3/3-3/9    
LC #8—Data Analytics and Visualization                                       |                                                                                                     |
| Off week   | 3/10-3/16  
Spring Break                                                                  |                                                                                                     |
| Week 10    | 3/17-3/23  
LC #9--Flow & Work Design Principles                                         | Course Project Meeting #3  
Present Current State Assessment  
3/18 5-7pm, 3/19 5-6pm  
Submit written Current State Assessment by 3/23 |
| Week 11    | 3/24-3/30  
LC #9 (cont)--Flow & Work Design Principles                                   |                                                                                                     |
| Week 12    | 3/31-4/6   
Course Project                                                                 | Submit root cause analysis and proposed countermeasure(s) by 4/6                                   |
| Week 13    | 4/7-4/13   
LC #10--Informatics & Outcomes Management                                      |                                                                                                     |
| Week 14    | 4/14-4/20  
Course Project                                                                 | Course Project Presentations  
4/15 5-7pm, 4/16 5-6p  
Submit Final Report by 4/20 |
| Week 15    | 4/21-4/27  
LC #11--Risk Assessment & Analysis                                           | Submit Project Team Evaluations by 4/27                                                             |
| Week 16    | 4/28-5/2   
Finals Week                                                                    |                                                                                                     |