Clinical Information Systems – INFO B535_NURS I631

Fall & Spring

Course Info  3 Credit hours
Location    Online
Prerequisites: None

COURSE DESCRIPTION

This online course provides an introduction to clinical information systems. Clinical information systems include: human computer interface and systems design; healthcare decision support and clinical guidelines; system selection; organizational issues in system integration; project management for information technology change; system evaluation; regulatory policies; impact of the Internet; economic impacts of e-health; distributed healthcare information technologies and future trends.

Required Text(s):
e-book
Language: English
ISBN 978-1-4471-4474-8
Additional readings as suggested by the instructor.

Additional Texts: (optional)
Edition: 3
Publisher: Taylor & Francis
ISBN: 144417049X, 9781444170498
Course Outcomes:
Upon the successful completion of the course, the student will be able to:

- Analyze the state of the science and current research issues related to (1) informatics applications for delivering and managing healthcare information in distributed environments and (2) clinical decision support/clinical guidelines.
- Characterize nursing knowledge representation in system design, and human computer interface issues (hardware, software, end user).
- Assess organizational challenges in the selection, integration and implementation of clinical information systems and develop strategies to meet these challenges.
- Apply evaluation methodologies to support design, development and implementation of clinical information systems.
- Analyze the issues related to security of information in clinical information systems in light of current standards, Federal regulatory requirements, and related organizational policies.
- Analyze the impact of information technology on delivery of clinical information and work redesign in the clinical enterprise.

Core Competencies:

1. Clinical Informatics Core Content Competencies
   - History of Health informatics (e.g., evolution of health records, clinical information systems)
   - Current and future challenges for health informatics
   - Clinical information systems applications in health care
   - Outcomes relevant to the clinical goals and quality measures
   - Qualitative and quantitative methods for evaluating clinical information systems
   - Legal and regulatory issues
   - Ethics and professionalism

2. Leading and Managing Change Competencies
   - Governance (e.g., processes; responsibility versus authority)
   - Assessment of organizational culture and behavior
   - Clinical information systems applications in health care
   - Strategies for promoting adoption and effective use of clinical information systems
3. Effective Communications Competencies

- Writing effectively for various audiences and goals
- Developing effective communications program to support system implementation
- Team productivity and effectiveness (e.g., articulating team goals, defining rules of operation, clarifying individual roles)
- Effective presentations to groups

4. Project Management Competencies

- Project management tools (non-software specific)
- Balancing competing priorities
- Scope and objectives management
- Group management processes (e.g., meetings, consensus mapping, Delphi method)

EXPECTATIONS, GUIDELINES, AND POLICIES

This is a three-credit, graduate-level course. In accordance with IUPUI policies and expectations, a 3:1 workload is expected: On-average, in addition to 3 hours in-class, this course should take approximately 12 - 15 hours per week. This workload will increase dramatically before assignments are due. This translates to a significant commitment of time each week. A graduate course is the equivalent of a rigorous, part-time job (15+ hours per week). Plan accordingly, pace yourself, and frontload your workflow.

Attendance:
Class attendance is required for classroom-based courses. It entails being present and attentive for the entire class period. Attendance shall be taken in every class. If you do not sign the attendance sheet while in class, you shall be marked absent. Signing the attendance sheet for another student is prohibited. The instructor is required to submit to the Registrar a record of student attendance, and action shall be taken if the record conveys a trend of absenteeism. Illness or a death in the immediate family is usually the only acceptable excuse for absence from class. Absences must be explained to the satisfaction of the instructor, who will decide whether omitted work may be made up. To protect your privacy, doctor’s excuses should exclude the nature of the condition and focus instead on how the condition affects your coursework. Missing class reduces your grade through the following grade reduction policy: You are allowed two excused or unexcused absences. Regardless of the reason, a third absence results in a 5% reduction in your final grade and a fourth absence results in a 10% reduction. Further absences result in an F in the course. Missing class may also reduce your grade by eliminating opportunities for class participation.
Incomplete:
The instructor may assign an Incomplete (I) grade only if at least 75% of the required coursework has been completed at passing quality and holding you to previously established time limits would result in unjust hardship to you. All unfinished work must be completed by the date set by the instructor. Left unchanged, an Incomplete automatically becomes an F after one year. [http://registrar.iupui.edu/incomp.html](http://registrar.iupui.edu/incomp.html)

Deliverables:
You are responsible for completing each deliverable (e.g., assignment, quiz) by its deadline and submitting it by the specified method. Deadlines are outlined in the syllabus or in supplementary documents accessible through Canvas. Should you miss a class, you are still responsible for completing the deliverable and for finding out what was covered in class, including any new or modified deliverable. In fairness to the instructor and students who completed their work on time, a grade on a deliverable shall be reduced 10%, if it is submitted late and a further 10% for each 24-hour period it is submitted after the deadline.

Grading Information:

<table>
<thead>
<tr>
<th>Learning Activities</th>
<th>Percentage of Grade</th>
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<tbody>
<tr>
<td>*Contribution to online threaded discussion</td>
<td>35%</td>
</tr>
<tr>
<td>Clinical Information System Evaluation paper</td>
<td>20%</td>
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<tr>
<td>*Staged course project (in collaboration with health care industry)</td>
<td>35%</td>
</tr>
<tr>
<td>OpenMRS Assignment</td>
<td>10%</td>
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*Contribute:  Responsive and knowledgeable of required online threaded discussion
* Examples of Course project:
Propose a computer interface solution to meet the needs of a diverse population
Design a project management plan to address the key issues in one aspect of an information system development
Provide a solution for an enterprise required to meet a new federal mandate for information security.
*Note: the course project will be executed in collaboration with health care institutions and as thus may require a few synchronous meetings with peers and the institution’s preceptor.
Principles of Graduate and Professional Learning (PGPL)
Upon completion of the course, the students will be:
* Demonstrating mastery of the knowledge and skills related to core competencies of course as expected for the degree and for professionalism and success in the field
* Thinking critically, applying good judgment in professional and personal situations when using health information technology
* Communicating effectively to others in the field and to the general public on any topics explored in the course
* Behaving in an ethical way both professionally and personally.

Evaluation Forms: Students should review all grading forms that will be used by the instructor to grade projects, presentations, papers, and other assignments.

If students want to see their grades at any time during the semester, they should contact the Instructor by phone or email.

Score: Criteria to Evaluate Threaded Discussions.
Student is scored on a scale of 1-4 (see table below) on each of the following attributes:

- **References:** the degree to which required reading are included and the way references are used in the student’s postings
- **Level of cognition:** the degree to which the student’s postings represent basic knowledge recall, comprehension, application or higher levels of cognition such as analysis, evaluation or synthesis from the readings/discussion.
- **Answer development and logic:** the degree to which the student’s postings logically address and develop the questions posed in the assignment.
- **Respect and level of peer interaction:** the degree to which the student’s postings reflect respect for others and the extent to which the student extends or generates higher levels of cognition among their peers

The average of the four attribute scores is considered the final score for each posting assignment. If the student posts beyond the due date, 10% or 0.4 points are deducted from the student’s final score, for each calendar day the student is late unless the student contacts the instructor prior to or within 24 hours of the due date and receives a waiver of the late penalty.

<table>
<thead>
<tr>
<th>Score</th>
<th>References</th>
<th>Level of cognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Demonstrate completion of all reading assignments and postings demonstrate student is applying referenced information; student adds additional referenced information and/or resources.</td>
<td>Demonstrates analysis, synthesis and/or evaluation levels of cognition by analyzing relationships or principles, creating new ideas or recognizing patterns, and/or being able to present and defend opinions by</td>
</tr>
</tbody>
</table>
making judgments about knowledge gained with appropriate and referenced defense of position.

- **Answer development and logic**: Postings are well-developed and logically reasoned.

- **Respect and level of peer interaction**: Respectfully encourages analytical and/or synthesis, and/or evaluative type discussions among peers.

<table>
<thead>
<tr>
<th>Score</th>
<th>References</th>
<th>Level of cognition</th>
<th>Answer development and logic</th>
<th>Respect and level of peer interaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>References demonstrate completion of all reading assignments and postings demonstrate student is applying referenced information.</td>
<td>Level of cognition: Demonstrates applied level of cognition by applying acquired knowledge, facts, techniques, or rules in a different way to solve practice, research, or educational problems.</td>
<td>Answer development and logic: Postings are well-developed; logic may not be clear.</td>
<td>Respect and level of peer interaction: Respectfully encourages analytical and/or synthesis, and/or evaluative type discussions among peers.</td>
</tr>
<tr>
<td>2</td>
<td>References demonstrate completion of all reading assignments and postings demonstrate student is primarily summarizing referenced information.</td>
<td>Level of cognition: Demonstrates comprehension level of cognition by primarily organizing, comparing/contrasting, translating, and/or interpreting course concepts and main ideas.</td>
<td>Answer development and logic: Postings are not fully developed; logic may not be clear.</td>
<td>Respect and level of peer interaction: Respectfully encourages knowledge recall and/or comprehension level of discussions among peers.</td>
</tr>
<tr>
<td>1</td>
<td>References demonstrate only partial completion of reading assignments and postings demonstrate student is primarily summarizing referenced information.</td>
<td>Level of cognition: Demonstrates basic knowledge level of cognition by primarily summarizing and/or restating course concepts and main ideas.</td>
<td>Answer development and logic: Postings reflect minimal effort in answer development or logic.</td>
<td>Respect and level of peer interaction: Not respectful of others and/or feedback to peers is minimal and primarily for the purpose of social interaction and/or acknowledgement of peer posting ideas.</td>
</tr>
<tr>
<td>0</td>
<td>Assignment not completed</td>
<td></td>
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</table>

- **References**
- **Level of cognition**
- **Answer development and logic**
- **Respect and level of peer interaction**
**Grading Scale:**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>97 – 100</td>
<td>Outstanding achievement, given at the instructor’s discretion</td>
</tr>
<tr>
<td>A</td>
<td>93 – 100</td>
<td>Excellent achievement</td>
</tr>
<tr>
<td>A–</td>
<td>90 – 092.99</td>
<td>Very good work</td>
</tr>
<tr>
<td>B+</td>
<td>87 – 089.99</td>
<td>Good work</td>
</tr>
<tr>
<td>B</td>
<td>83 – 086.99</td>
<td>Marginal work</td>
</tr>
<tr>
<td>B–</td>
<td>80 – 082.99</td>
<td>Very marginal work</td>
</tr>
<tr>
<td>C+</td>
<td>77 – 079.99</td>
<td>Unacceptable work (Core course must be repeated)</td>
</tr>
<tr>
<td>C</td>
<td>73 – 076.99</td>
<td>Unacceptable work (Core course must be repeated)</td>
</tr>
<tr>
<td>C–</td>
<td>70 – 072.99</td>
<td>Unacceptable work (Elective or core course must be repeated)</td>
</tr>
<tr>
<td>D+</td>
<td>67 – 069.99</td>
<td>Unacceptable work (Elective or core course must be repeated)</td>
</tr>
<tr>
<td>D</td>
<td>63 – 066.99</td>
<td>Unacceptable work (Elective or core course must be repeated)</td>
</tr>
<tr>
<td>D–</td>
<td>60 – 062.99</td>
<td>Unacceptable work (Elective or core course must be repeated)</td>
</tr>
<tr>
<td>F</td>
<td>Below 60</td>
<td>Unacceptable work (Elective or core course must be repeated)</td>
</tr>
</tbody>
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