Summary

This course is an introduction into advanced medical equipment systems with modules covering all clinical imaging modalities, surgical systems, radiation and physical therapy equipment, clinical laboratory equipment, and networks connected to medical devices.

Learning Objectives

1. Provide a basic understanding of the technology associated with advanced medical equipment systems.
2. Provide a methodology for participants to improve the safety and cost-effectiveness of advanced technologies through proper use, an understanding of safety issues, and appropriate maintenance.
3. Help students better communicate with technical staff, other clinicians, administrators, and equipment vendors.
4. Develop the student’s interest, and prepare them for further study and more advanced application of the principles.

Methods

The course will utilize web-based content including text, photos, diagrams, flow charts, other figures, video, audio, links to other websites, interactive tools, and other web attributes to deliver content to students.

The topics to be included for each medical technology covered in this course are:

1. Device principles,
2. Proper clinical application,
3. Patient safety,
4. Common device/technique problems and resolution
5. Care, maintenance, and quality assurance, and
6. Technology management

Supplemental Texts – Not required


Grading

Student Evaluation and Grading

Five (5) Quizzes - each 7 points (35 points total)
There will be a five question quiz after completion of grouped topics. Quizzes will primarily be multiple choice, True/False, and Matching Questions. There will be a time limit of 20 minutes for each quiz.

Two (2) Exams - each 25 points (50 points total)
Exams will occur approximately half way through the course and at the end of the course. Each exam will cover one half of the course. Exams will be 75 minutes with 20-25 questions to complete.

Three (3) Discussion Questions – each 5 points (15 points total)
The discussion board will be an important part of the course. Discussion topics will be presented and students are asked to respond. Students are also expected to respond to at least one other student posting to the discussion question.

All graded quizzes and tests are "open book" - you are allowed to research questions using the Course Content modules. However, there is a time limit on quizzes and tests. They must be completed in the allotted time. Many Content Modules will have a reading assignment and a Discussion question on Day 1 and a Quiz or other assignment on Day 2.

Optional - Extra Credit Report

One written report - up to 5 points

An optional extra credit report on a topic of your choosing related to a medical device, technology, technology-related procedure or system can be completed with a maximum added five (5) points to your grade. The extra credit report is due on the last official class day.

The report should be 10 pages of double spaced text. The report should be completed in MS Word or Adobe PDF.

The sections of the report should include:

- Title page with title, course title, student's name and date
- Table of contents
- (Main body of the paper)
- Conclusion
- Bibliography

Criteria for grading will be:

1. Organization
2. Presentation
3. Creativity and originality
4. Quality and accuracy
5. Technical versus clinical content (should have components of each)
6. Format, grammar, spelling, etc
Final Grades

The letter grade shown corresponds to the final numeric grade which will be shown in *My Grades*.

A+ = 97.5 - 100
A  = 92.5-97.4
A-  = 90-92.4
B+  = 87.5-89.9
B   = 82.5-87.4
B-  = 80-82.4
C+  = 77.5-79.9
C   = 72.5-77.4
C-  = 70-72.4
D   = 60-69.9
F   = <60

HLTH 135 Advanced Medical Equipment Systems topics

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<td>Imaging: Radiography</td>
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<td>Imaging: Fluoroscopy</td>
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<td>Imaging: Computed Tomography (CT)</td>
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<td>Imaging: Nuclear Medicine (NM)</td>
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<td>Imaging: Magnetic Resonance Imaging</td>
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<td>Surgical Systems: Minimally invasive/ Robotic</td>
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