

Computers in Healthcare (HITT 1211)

Fully Online



Credit: 2 semester credit hour (2 hours lecture)

Prerequisite/Co-requisite: HITT 1401, Microcomputer Applications (COSC 1301). Complete the Online Orientation and answer yes to 7+ questions on the Online Learner Self-Assessment:

<http://www.lit.edu/depts/DistanceEd/OnlineOrientation/OOStep2.aspx>

Course Description:

Concepts of computer technology related to health care data. *This course is time-bound, structured, and completed totally online.*

Required Textbook and Materials:

1. Sales, N. and Trawick, K., *Introduction to Computer Systems for Health Information Technology*, 2nd edition, AHIMA Press
 - a. ISBN: 9781584263937
2. Computer with internet access.

Course Objectives:

Upon completion of the course, the student should be able to:

1. Identify the purpose and value of computer functions
2. How to care for and maintain computer components
3. Complete computerized task performance assignments
4. Perform systems back-up
5. Utilize tools and techniques for collecting, storing, securing, retrieving and reporting health care data.

Course Outline:

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| A. Introduction to Computers | 5. Databases |
| 1. History of Computers | 6. Graphics Presentation Software |
| 2. Impact of Computers | 7. Calendar Software |
| 3. Hardware | 8. Project Management Software |
| 4. Software | 9. Electronic Mail Software |
| 5. Communication and Internet Technologies | 10. Internet and Web Browsers |
| B. Common Software Applications | C. Data Quality |
| 1. Development of Software | 1. Raw Data vs. Information |
| 2. Software Licensing | 2. Data Sources |
| 3. Word Processing | 3. Data Content Standards |
| 4. Spreadsheets | 4. Data Collection |
| | 5. Data Sets |

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6. Data Definitions
7. Standardized Data
8. Duplication of Data
9. Data Elements
10. Data Quality Management Model
11. Data Quality Issues
12. Data Quality: Building It into Information Systems
13. Data Reliability: Uniformity in the System
- D. Databases
 1. Computer Files
 2. Data Definitions
 3. Data Management System
 4. Data Modeling
 5. Data Warehouses and Data Repository
 6. Data Mining
- E. System Selection and Implementation
 1. Change Management
 2. Planning
 3. The Importance of Planning
 4. Conducting a Feasibility Study
 5. Setting the Budget
 6. Goals and Objectives
 7. Identifying the Project Manager and Project Team
 8. Determining Who Will Build and Maintain the System
 9. Choosing between Integrated and Interfaced Systems
 10. Obtaining Buy-in from Management and Users
 11. Organization of Project
 12. Defining Scope of Project
 13. System Development Life Cycle
 14. SDLC Process
 15. System Selection
 16. Contract Negotiation
 17. System Design
 18. System Implementation
 19. Conversion
 20. Reengineering Processes
 21. Policy and Procedure Development and Documentation
 22. Training
 23. Testing Plan
 24. Conversion
 25. Go-Live
- F. Data Storage and Retrieval
 1. Data Sources
 2. Maintenance and Monitoring of Data Storage Systems
 3. Report Generation and Data Monitoring
- G. Computers in HIM
 1. Release of Information System and Disclosure Management
 2. Encoder and Grouper
 3. Cancer and Other Registries
 4. Chart Locator
 5. Birth Certificate
 6. Chart Deficiency
 7. Transcription
 8. Healthcare Quality Indicator
 9. Dictation System
 10. Computer-Assisted Coding
 11. Clinical Documentation Improvement
- H. Administrative Information Systems
 1. Financial Information System
 2. Human Resources Information Systems
 3. Decision Support System
 4. Master Patient Index
 5. Patient Registration
 6. Scheduling System
 7. Practice Management
 8. Materials Management System
 9. Facilities Management
- I. Clinical Information Systems
 1. Document Management System
 2. Document Management System vs. EHR
 3. Advantages and Disadvantages
 4. Implementation
 5. Justification of Cost of System
 6. Forms
 7. Staffing Changes
 8. Process Redesign
 9. When Should the Chart Be Scanned?
 10. Immediately Following Discharge
 11. Scanning Upon Completion
 12. Components of a Document Management System
 13. Retrieval of Images
 14. Future of Document Management System
 15. Radiology Information Systems

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- 16. Laboratory Information Systems
- 17. Nursing Information Systems
- 18. Pharmacy Information System
- 19. Pharmacy Information System
- 20. Cardiology Information System
- 21. Interdisciplinary Charting System
- 22. Emergency Department System
- 23. Anesthesia Information System
- 24. Patient Monitoring Systems
- 25. Telehealth
- 26. Impact on HIM
- 27. Smart Cards
- 28. Impact of Clinical Information Systems on HIM
- J. Electronic Health Record
 - 1. Status
 - 2. Components of EHR
 - 3. Benefits of the EHR
 - 4. Barriers to the EHR
 - 5. Functionality
 - 6. Signatures
 - 7. Classification Systems
 - 8. Standards
 - 9. Vocabulary Standards
 - 10. Messaging Standards
 - 11. Data Structures
 - 12. EHR Tools
 - 13. Legal Issues
 - 14. Interoperability
 - 15. Meaningful Use
- 16. Transition Period – Hybrid Record
- 17. Impact on HIM
- K. Speech Recognition
 - 1. History of Speech Recognition
 - 2. Benefits of Speech Recognition
 - 3. Speech Recognition Software
 - 4. Speech Pattern Issues
 - 5. Issues with Speech Recognition
 - 6. Speech Recognition Principles
- L. Privacy and Security
 - 1. Health Insurance Portability and Accountability Act of 1996 (HIPAA)
 - 2. Security
 - 3. Malicious Software
 - 4. Security Incident Procedures
 - 5. Certifications
- M. Role of HIM Professionals in Information Systems
 - 1. Skills Possessed
 - 2. e-HIM
 - 3. Roles by Employer
 - 4. Roles by Function
- N. The Future of Computers in Healthcare
 - 1. Computer-Assisted Coding
 - 2. Patient Safety
 - 3. Business Intelligence

Grade Scale:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
0 - 59	F

Course Evaluation:

Final grades will be calculated according to the following criteria:

Participation/Discussions	20%
Course Assignments/Quizzes	20%
Unit Exams (4)	45%
Comprehensive Final Exam (Proctored)*	15%

*The student will be required to take the comprehensive final in a proctored environment.

Course Requirements:

1. Students can complete this course without physically visiting the institution offering the course.
2. The student will be able to perform computer functions.
3. The student will be able to perform computerized tasks.
4. The student will be able to work with an electronic patient record.
5. The student will post discussions as instructed along with any other assignments instructed to complete.
6. The student will complete online quizzes and unit exams by the due dates shown on the course calendar.
7. The student will be required to take the final exam in a proctored environment. If you live within 60 miles from campus, please plan to take the proctored exam within the LIT ACT Testing Center located in T1 Building. Learners from a distance may make alternative arrangements.

Course Policies:

Students must provide their own textbooks, writing instruments, and other necessary supplies for classes.

1. Students must log onto Blackboard and access this course a minimum of 4 – 5 times per week.
2. Internet Usage – Students are expected to use proper net etiquette while participating in course emails, assignment submissions, and online discussions.
3. Cheating of any kind will not be tolerated. If proven to have cheated, a grade of “0” will be assigned and possible expulsion from the class and/or program.
4. All exams will be taken on the scheduled dates. There will be **NO MAKE UP EXAMS**.
5. All assignments are due when stated. Late assignments are not accepted.
6. Additional course policies are outlined in “Classroom Policies” provided at the beginning of the semester.
7. Students are expected to follow the Lamar Institute of Technology Code of Conduct and Disciplinary Policy
8. Any violation of classroom policies may result in student being asked to leave class and result in an absence.
9. **If you wish to drop a course, the student is responsible for initiating and dropping the course. If you stop logging-in to the course and do not complete the course drop process, then you will receive an “F” grade for the course.**
10. The instructor will respond to e-mail and voice mail communication within 24 hours Monday through Friday with the exception of weekends and holidays. Assignment grades will be published within 2 weeks of the assignment due date.

Technical Requirements:

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at:

<http://kb.blackboard.com/pages/viewpage.action?pageId=25368512>

A functional internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

Disabilities Statement:

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the online resource:

<http://www.lit.edu/depts/stuserv/special/defaults.aspx>

Course Schedule:

Week of Semester	Topic	Textbook Reference
Week 1	Welcome and Introductions Computer Ergonomics & Computer Ethics Ch 1: Introduction to Computers	N/A Online: <ul style="list-style-type: none"> Module 1: Computer Ergonomics & Computer Ethics Chapter 1 Textbook: Pp 1 – 16
Week 2	Ch 2: Common Software Applications	Online: <ul style="list-style-type: none"> Module 1: Chapter 2 Textbook: Pp 17 - 30
Week 3	Ch 3: Data Quality	Online: <ul style="list-style-type: none"> Module 1: Chapter 3 Textbook: Pp 31 - 48
Week 4	Ch 4: Databases Exam 1 (Chapters 1 – 4)	Online: <ul style="list-style-type: none"> Module 1: Chapter 4 Textbook: Pp 49 – 62
Week 5	Ch 5: System Selection and Implementation	Online: <ul style="list-style-type: none"> Module 2: Chapter 5 Textbook: Pp 63 - 100
Week 6	Ch 6: Data Storage and Retrieval	Online: <ul style="list-style-type: none"> Module 2: Chapter 6 Textbook: Pp 101 - 110
Week 7	Ch 7: Computers in HIM Exam 2 (Chapters 5 – 7)	Online: <ul style="list-style-type: none"> Module 2: Chapter 7 Textbook: Pp 111 - 126
Week 8	Ch 8: Administrative Information Systems	Online:

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		<ul style="list-style-type: none"> Module 3: Chapter 8 Textbook: Pp 127 - 138
Week 9	Ch 9: Clinical Information Systems	Online: <ul style="list-style-type: none"> Module 3: Chapter 9 Textbook: Pp 139 - 154
Week 10	Ch 10: Electronic Health Record	Online: <ul style="list-style-type: none"> Module 3: Chapter 10 Textbook: Pp 155 - 188
	Exam 3 (Chapters 8 – 10)	
Week 11	Ch 11: Speech Recognition	Online: <ul style="list-style-type: none"> Module 4: Chapter 11 Textbook: Pp 189 - 200
Week 12	Ch 12: Privacy and Security	Online: <ul style="list-style-type: none"> Module 4: Chapter 12 Textbook: Pp 201 - 234
Week 13	Ch 13: Role of HIM Professionals in Information Systems	Online: <ul style="list-style-type: none"> Module 4: Chapter 13 Textbook: Pp 235 - 250
Week 14	Ch 14: The Future of Computers in Healthcare	Online: <ul style="list-style-type: none"> Module 4: Chapter 14 Textbook: Pp 251 - 258
	Exam 4 (Chapters 11 – 14)	
Week 15	Review: Final Exam	
Week 16	Proctored Comprehensive Final Exam (Chapters 1 – 14)* <ul style="list-style-type: none"> Must be taken in a proctored environment 	

Contact information will be provided by instructor.