

Rural Health IT Workforce Program

Curriculum Outline

Organization: Midland College

Course: Data Quality Manager and IT Liaison

Certifications: AHIMA CHTS-PW, CHTS-IM, CHTS-IS and CHTS-TS

The Certified Healthcare Technology Specialist (CHTS) exams will confirm that a candidate’s experience and skills are ready to meet the nation’s need for health information technology workers. As the healthcare industry transitions to electronic health records (EHRs), CHTS credential holders show a commitment to their profession and their career. They are eager to demonstrate competency in this evolving field and are excited to work on the leading edge of health IT. The future of health IT starts with the (CHTS) competency exams.

Practice Workflow & Information Management Redesign Specialist

Workers in this role assist in reorganizing the work of a provider to take full advantage of the features of health IT in pursuit of meaningful use of health IT to improve health and care. Individuals in this role may have backgrounds in health care (for example, as a practice administrator) or in information technology, but are not licensed clinical professionals. Workers in this role will:

- Conduct user requirements analysis to facilitate workflow design.
- Integrate information technology functions into workflow.
- Document health information exchange needs.
- Design processes and information flows that accommodate quality improvement and reporting.
- Work with provider personnel to implement revised workflows.
- Evaluate process workflows to validate or improve practice’s systems.

Domain/Percentage	Competency Statements:
Domain I: Fundamentals of Health Workflow Process Analysis and Redesign 15%	<ol style="list-style-type: none"> 1. Given a scenario, outline the elements involved in providing care within a complex health care system that reflect an understanding of workflow processes. 2. Document clinic processes to facilitate workflow analysis and redesign. 3. Develop a process map for given clinical process workflows within a complex health care system. 4. Facilitate decision-making necessary for optimizing health care processes. 5. Critically analyze the workflow processes in a selected clinical setting, taking into account potential gaps, areas of redundancy, delays, manual work, work volume, task time, and elapsed time. 6. Design processes and information flows for the practice that accommodate quality improvement and reporting. 7. Develop a plan for a revised and optimized clinical workflow within a

	<p>health care system that integrates meaningful use of information technology.</p> <p>8. Propose ways in which quality improvement methods and tools can be applied in order to improve workflow processes in a health care setting.</p> <p>9. Develop and present an implementation plan for a process change.</p> <p>10. Working with practice staff, develop a set of plans to keep the practice running if the EHR system fails.</p> <p>11. Working with practice staff, evaluate the new processes as implemented, identify problems and changes that are needed, and develop and present plans for these process changes.</p> <p>12. Apply to these activities an understanding of health IT, meaningful use, and the challenges practice settings will encounter in achieving meaningful use.</p>
<p>Domain II: Usability and Human Factors 15%</p>	<p>1. Articulate a systems approach to usability and human factors as it applies to health information technology.</p> <p>2. Explain the cognitive consequences of health information technology on clinical performance.</p> <p>3. Identify the consequences of suboptimal design in the delivery of healthcare.</p> <p>4. Apply methods of cognitive research, sources of usability evidence, and principles of user-centered design to decisions regarding systems evaluation, technology evaluation, and iterative design, given a population of users.</p> <p>5. Apply requirements engineering methods to inform design and technology selection.</p> <p>6. Demonstrate concept knowledge of cognition and human performance models in their relevance to systems evaluation methods.</p> <p>7. Apply concept knowledge of cognitive, physical and organization ergonomics to human factors engineering.</p> <p>8. Select the most appropriate usability evaluation method, given particular system, setting, and development phase.</p> <p>9. Apply principles of usability and design to critiquing EHR systems and to making recommendations for iterative improvement.</p> <p>10. Diagnose problems associated with a clinical decision support system.</p> <p>11. Apply cognitive methods of analysis to medical device.</p> <p>12. Evaluate user interface designs using cognitive methods of analysis, usability testing, and Nielsen's heuristic evaluation method.</p> <p>13. Diagnose various types of error and create or select potential solutions.</p> <p>14. Select appropriate technology input methods given different</p>

	<p>technology uses, user populations and contexts.</p> <p>15. Describe how information visualization can support and enhance the representation of trends and aggregate data.</p> <p>16. Describe the role of mobile and ubiquitous computing in healthcare.</p>
<p>Domain III: Health Management Information Systems 14%</p>	<ol style="list-style-type: none"> 1. Describe general functions, purposes and benefits of health information systems, why they are needed, and the benefits they provide in different healthcare and public health settings. 2. Describe the significant developments and federal initiatives that have influenced the evolution and adoption of health information systems. 3. Compare/Contrast different types of health information systems in terms of their ability to support the requirements of a health care enterprise. 4. Understand how electronic health records affect patient safety, quality, efficiency and patient care, productivity, and reporting outcomes. 5. Propose strategies to minimize major barriers to the adoption of electronic health records. 6. Understand the principles of healthcare data exchange and standards, workflow design and assessment, and their relationship to patient care.
<p>Domain IV: Quality Improvement 14%</p>	<ol style="list-style-type: none"> 1. Analyze clinical decision-making requirements, including who, what, when, how, and where information is needed. 2. Design and implement information technology that supports effective teamwork, fosters open communication and enables shared decision-making to achieve quality patient care. 3. Analyze clinical workflows to design information technology that supports clinical decision-making and care coordination. 4. Design and apply information technology and standardized practices that support safety and quality. 5. Formulate activation planning that supports and maintains safety and quality. 6. Select and apply quality measures for incorporation into information systems to enable review of outcomes of care and identification of improvement opportunities. 7. Assess findings from quality reviews of reported events to design and implement clinical information system improvements. 8. Select improvement tools to assist clinical teams in improving the quality and safety of the electronic health record. 9. Monitor use of information technology for inappropriate use leading to hazards and errors.

	<p>10. Design an information technology culture conducive to highly reliable processes built on human factors research.</p> <p>11. Design and implement effective strategies to use information technology to decrease reliance on memory.</p>
<p>Domain V: Introduction to Information and Computer Science 14%</p>	<p>1. Use proper hardware, network, Internet and software computer terminology in written and verbal communications.</p> <p>2. Write simple computer programs including constructs such as conditional statements, loops, functions, objects, simple data structures, etc.</p> <p>3. Design a simple database and develop querying statements for it.</p> <p>7</p> <p>4. Describe network computing, its benefits and risks, and identify commonly-used communications hardware and software components.</p> <p>5. Identify security risks for computing systems and discuss potential solutions.</p> <p>6. Explain the design and development process of a large system such as an EHR.</p>
<p>Domain VI: Terminology in Health Care and Public Health Settings 14%</p>	<p>1. Define, understand and correctly pronounce medical terms related to each of the major body systems.</p> <p>2. Define commonly used terms in public health, nursing, health information technology, and clinical vocabularies & terminologies related to the implementation of electronic health records.</p> <p>3. Identify the purpose and uses of pertinent health care terminologies in the electronic health record.</p> <p>4. Demonstrate the ability to integrate and use health care terminology in the various health information technology roles.</p>
<p>Domain VII: The Culture of Health Care 14%</p>	<p>1. Describe the major types of clinical personnel involved in health care, including their education and training, certification and licensure, and typical roles in health care.</p> <p>2. Describe the major types of settings in which health care occurs including ambulatory care, acute and emergency care, hospital based and critical care, and community health and public health settings.</p> <p>3. Describe the major processes of information gathering, analysis, and documentation used by clinicians to detect, understand, and prevent or treat diseases.</p> <p>4. Give examples and explain the differences between common forms of care delivery including episodic one-on-one care, multidisciplinary care, interdisciplinary care, care of chronic conditions, population based care, disease management, long-term care, end of life care.</p> <p>5. Describe the role of community health and public health in managing illness outbreaks, epidemics, and pandemics.</p> <p>6. Discuss the role of medical ethics and professional values in care</p>

	<p>delivery including such issues as privacy (including HIPAA), ethical conflicts, and health disparities.</p> <p>7. Describe common forms of quality measurement, performance improvement, and incentive payment schemes meant to influence care delivery.</p>
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Implementation Manager

Workers in this role provide on-site management of mobile adoption support teams for the period of time before and during implementation of health IT systems in clinical and public health settings. Workers in this role will, prior to training, have experience in health and/or IT environments as well as administrative and managerial experience. Workers in this role will:

- Apply project management and change management principles to create implementation project plans to achieve the project goals.
- Interact with office/hospital personnel to ensure open communication with the support team.
- Lead implementation teams consisting of workers in the roles described above.
- Manage vendor relations, providing feedback to health IT vendors for product improvement.

Domain/Percentage	Competency Statements:
Domain I: Project Management 17%	<ol style="list-style-type: none"> 1. Describe factors that are critical to project success. 2. Develop a comprehensive project management plan. 3. Define project scope that reflects stakeholder perspectives and project requirements. 4. Prepare an effective work breakdown structure. 5. Differentiate project life cycle models based on project characteristics. 6. Develop estimates for project cost and schedule. 7. Apply tools and techniques to manage project scope, time, and budget. 8. Plan and implement effective communications with the project team and stakeholders. 9. Differentiate roles of project team members.
Domain II: Fundamentals of Health Workflow Process Analysis and Redesign 17%	<ol style="list-style-type: none"> 1. Given a scenario, outline the elements involved in providing care within a complex health care system that reflect an understanding of workflow processes. 2. Document clinic processes to facilitate workflow analysis and redesign. 3. Develop a process map for given clinical process workflows within a complex health care system. 4. Facilitate decision-making necessary for optimizing health care processes. 5. Critically analyze the workflow processes in a selected clinical

	<p>setting, taking into account potential gaps, areas of redundancy, delays, manual work, work volume, task time, and elapsed time.</p> <p>6. Design processes and information flows for the practice that accommodate quality improvement and reporting.</p> <p>7. Develop a plan for a revised and optimized clinical workflow within a health care system that integrates meaningful use of information technology.</p> <p>8. Propose ways in which quality improvement methods and tools can be applied in order to improve workflow processes in a health care setting.</p> <p>9. Develop and present an implementation plan for a process change.</p> <p>10. Working with practice staff, develop a set of plans to keep the practice running if the EHR system fails.</p> <p>11. Working with practice staff, evaluate the new processes as implemented, identify problems and changes that are needed, and develop and present plans for these process changes.</p> <p>12. Apply to these activities an understanding of health IT, meaningful use, and the challenges practice settings will encounter in achieving meaningful use.</p>
<p>Domain III: Working in Teams 17%</p>	<p>1. Establish and monitor ground rules, or rules of engagement, that serve as behavioral guidelines for members of teams involved in HIT.</p> <p>2. Develop an HIT action plan that can be easily adapted to changing situations, environments, and goals across a variety of health and healthcare settings.</p> <p>3. Communicate a clearly articulated position in writing and speech.</p> <p>4. Incorporate diversity in values, critical thinking, and judgments that amplifies the best of individual performance toward the HIT team mission.</p> <p>5. Provide leadership for continuous assessment and learning on practices, processes, and outcomes of the HIT team mission.</p> <p>6. Develop a sustaining framework that maximizes the integrated power of teams while recognizing excellence in individual performance of various stakeholders involved in HIT (patients, families, communities, nation, etc.).</p>
<p>Domain IV: The Culture of Health Care 17%</p>	<p>1. Describe the major types of clinical personnel involved in health care, including their education and training, certification and licensure, and typical roles in health care.</p> <p>2. Describe the major types of settings in which health care occurs including ambulatory care, acute and emergency care, hospital based and critical care, and community health and public health settings.</p> <p>3. Describe the major processes of information gathering, analysis, and documentation used by clinicians to detect, understand, and prevent</p>

	<p>or treat diseases.</p> <p>4. Give examples and explain the differences between common forms of care delivery including episodic one-on-one care, multidisciplinary care, interdisciplinary care, care of chronic conditions, population based care, disease management, long-term care, end of life care.</p> <p>5. Describe the role of community health and public health in managing illness outbreaks, epidemics, and pandemics.</p> <p>6. Discuss the role of medical ethics and professional values in care delivery including such issues as privacy (including HIPAA), ethical conflicts, and health disparities.</p> <p>7. Describe common forms of quality measurement, performance improvement, and incentive payment schemes meant to influence care delivery.</p>
<p>Domain V: Planning, Management, and Leadership for Health IT 16%</p>	<p>1. Explain leadership traits and theories.</p> <p>2. Recognize leadership’s role in IT and EHR project success and project failure.</p> <p>3. Describe importance of effective leadership of teams.</p> <p>4. Demonstrate team leadership competencies.</p>
<p>Domain VI: History of Health Information Technology in the U.S. 16%</p>	<p>Competency Statements:</p> <p>1. Explain the rationale for elements of the HITECH Act in terms of the history of health IT.</p> <p>2. Describe the background of today’s health IT landscape including EHR, HIE, CDS, applications in Public Health, relevant professional organizations.</p> <p>3. Describe the history of regulation of Health IT in the U.S.</p> <p>4. Describe how legislation related to privacy and security of electronic health information has evolved in the US.</p> <p>5. Discuss how financial incentives for use of HIT have changed over time.</p>

Implementation Support Specialist

Workers in this role provide on-site user support for the period of time before and during implementation of health IT systems in clinical and public health settings. The previous background of workers in this role includes information technology or information management. Workers in this role will:

- Execute implementation project plans, by installing hardware (as needed) and configuring software to meet practice needs.
- Incorporate usability principles into design and implementation.
- Test the software against performance specifications.

- Interact with the vendors as needed to rectify problems that occur during the deployment process.

Domain/Percentage	Competency Statements:
Domain I: Networking and Health Information Exchange 15%	<ol style="list-style-type: none"> 1. Explain the functions of all layers of the ISO OSI models, including how they are interconnected and supported. 2. Recommend components of networking hardware that meet standards and support information exchange. 3. Analyze standards associated with the EHR functional model, the PHR functional model, and the family of profiles associated with specific domain functional requirements. 4. Explain the process and value of EHR certification. 5. Describe data standards required for the interoperable exchange of health care data, including terminology, data elements, document standards, imaging standards, and medical device standards. 6. Describe components of health IT standards (including HL7 and TC215) for health information exchange used by various stakeholders. 7. Examine additional standards related to shared and effective use of data, including clinical decision support. 8. Describe enterprise architecture models, including centralization vs federation and grids, service oriented architectures, and local implementations with respect to systems from single units to organizations, regions (RHIOS and HIEs), states, and nationwide healthcare information systems (NHIN). 9. Incorporate professional and regulatory standards related to privacy, confidentiality, and security when implementing and maintaining networks and health information exchange systems, including NHIN.
Domain II: Configuring EHRs 15%	<ol style="list-style-type: none"> 1. Describe the process of migration to an electronic health record (EHR) from organizational strategy, planning, analysis of EHR options, decision-making techniques, training, and implementation strategies. 2. Given a case study of a facility moving from a paper health record to an EHR, discuss the migration path from organizational strategy to implementation, including meaningful use criteria. 3. Discuss the importance and use of clinical decision support systems for clinical and administrative use. 4. Given an EHR system, configure the system to achieve features required for meaningful use, including labs for: <ol style="list-style-type: none"> a. Building of order sets b. Data entry templates c. Generate quality reports d. Implementation of clinical decision support 5. Understand data infrastructure including data architecture, data sets, data repositories, data standards, data types and data

	<p>dictionaries.</p> <ol style="list-style-type: none"> 6. Write an RFI/RFP using stated criteria. 7. Evaluate EHR systems to select an EHR most appropriate to an organization and clinical setting.
<p>Domain III: Vendor-Specific Systems 14%</p>	<ol style="list-style-type: none"> 1. Assess and compare common commercial EHR systems using KLAS ratings in training and organizational decision-making contexts. 2. Apply CCHIT, meaningful use, Joint Commission and National Patient Safety Goals to decisions about commercial EHR vendor selection, when given typical workplace scenarios. 3. Evaluate key factors (costs of an EHR, including capital, licensing, maintenance and staffing, and stakeholder needs) into workplace decisions for selecting vendor-specific systems. 4. Analyze the functionality of a vendor EHR system, given a set of user needs. 5. Compare database architectures employed by different vendor applications to evaluate how these impact performance and extensibility. 6. Evaluate EHR systems based on vendor strategies for terminology management, knowledge management and data exchange. 7. Compare decision support capabilities and customizability, given different vendor EHRs. 8. Evaluate training and go-live strategies of different EHR vendors in terms of impact on cost, workflow, and patient safety.
<p>Domain IV: Working with Health IT Systems 14%</p>	<ol style="list-style-type: none"> 1. Identify common components of an HIT system and types of HIT applications (E-Mar, POE, PACS, ADT, Lab, DSS, Registries, Billing/Coding, etc, and acute care, community health, public health, small provider practices, etc.). 2. Describe data flows across HIT systems and implication of standards. 3. Identify root causes of HIT-induced error (i.e. usability, workflow interference, system error, etc.) and suggest solutions. 4. Assess the strengths and weaknesses of identified solutions to identified HIT problems (to emphasize the reality of “solutions” and illustrate the frequent domino effect/unintended consequences of change of an HIT system). 5. Define usability, describes general usability principles, and relates usability to adoption in relation to HIT. 6. Define and differentiate security, confidentiality, and privacy and identify common threats. 7. Demonstrate beginning level competency in general HIT system use.
<p>Domain V: Installation and Maintenance of</p>	<ol style="list-style-type: none"> 1. Articulate the elements of Health IT systems, including their advantages and disadvantages. 2. Justify criteria to be considered when recommending vendors and

Health IT Systems 14%	software. 3. Design a comprehensive plan to install a health IT system. 4. Design a comprehensive plan to maintain and troubleshoot a health IT system, incorporating system updates and user feedback. 5. Implement project plans by installing and configuring hardware and software, interacting with vendors and users as needed. 6. Verify plan implementation.
Domain VI: Information and Computer Science 14%	1. Use proper hardware, network, Internet and software computer terminology in written and verbal communications. 2. Write simple computer programs including constructs such as conditional statements, loops, functions, objects, simple data structures, etc. 3. Design a simple database and develop querying statements for it. 4. Describe network computing, its benefits and risks, and identify commonly-used communications hardware and software components. 5. Identify security risks for computing systems and discuss potential solutions. 6. Explain the design and development process of a large system such as an EHR.
Domain VII: Terminology in Health Care and Public Health Settings 14%	1. Define, understand and correctly pronounce medical terms related to each of the major body systems. 2. Define commonly used terms in public health, nursing, health information technology, and clinical vocabularies & terminologies related to the implementation of electronic health records. 3. Identify the purpose and uses of pertinent health care terminologies in the electronic health record. 4. Demonstrate the ability to integrate and use health care terminology in the various health information technology roles

Technical/Software Support Staff

Workers in this role maintain systems in clinical and public health settings, including patching and upgrading of software. The previous background of workers in this role includes information technology or information management. Workers in this role will:

- Interact with end users to diagnose IT problems and implement solutions.
- Document IT problems and evaluate the effectiveness of problem resolution.
- Support systems security and standards.

Domain/Percentage	Competency Statements:
Domain I: Networking and Health Information	1. Explain the functions of all layers of the ISO OSI models, including how they are interconnected and supported. 2. Recommend components of networking hardware that meet

<p>Exchange 15%</p>	<p>standards and support information exchange.</p> <ol style="list-style-type: none"> 3. Analyze standards associated with the EHR functional model, the PHR functional model, and the family of profiles associated with specific domain functional requirements. 4. Explain the process and value of EHR certification. 5. Describe data standards required for the interoperable exchange of health care data, including terminology, data elements, document standards, imaging standards, and medical device standards. 6. Describe components of health IT standards (including HL7 and TC215) for health information exchange used by various stakeholders. 7. Examine additional standards related to shared and effective use of data, including clinical decision support. 8. Describe enterprise architecture models, including centralization vs. federation and grids, service oriented architectures, and local implementations with respect to systems from single units to organizations, regions (RHIOS and HIEs), states, and nationwide healthcare information systems (NHIN). 9. Incorporate professional and regulatory standards related to privacy, confidentiality, and security when implementing and maintaining networks and health information exchange systems, including NHIN.
<p>Domain II: Special Topics Course on Vendor-Specific Systems 15%</p>	<ol style="list-style-type: none"> 1. Assess and compare common commercial EHR systems using KLAS ratings in training and organizational decision-making contexts. 2. Apply CCHIT, meaningful use, Joint Commission and National Patient Safety Goals to decisions about commercial EHR vendor selection, when given typical workplace scenarios. 3. Evaluate key factors (costs of an EHR, including capital, licensing, maintenance and staffing, and stakeholder needs) into workplace decisions for selecting vendor-specific systems. 4. Analyze the functionality of a vendor EHR system, given a set of user needs. 5. Compare database architectures employed by different vendor applications to evaluate how these impact performance and extensibility. 6. Evaluate EHR systems based on vendor strategies for terminology management, knowledge management and data exchange. 7. Compare decision support capabilities and customizability, given different vendor EHRs. 8. Evaluate training and go-live strategies of different EHR vendors in terms of impact on cost, workflow, and patient safety.
<p>Domain III: Introduction to</p>	<ol style="list-style-type: none"> 1. Use proper hardware, network, Internet and software computer terminology in written and verbal communications.

<p>Information and Computer Science 14%</p>	<ol style="list-style-type: none"> 2. Write simple computer programs including constructs such as conditional statements, loops, functions, objects, simple data structures, etc. 3. Design a simple database and develop querying statements for it. 4. Describe network computing, its benefits and risks, and identify commonly-used communications hardware and software components. 5. Identify security risks for computing systems and discuss potential solutions. 6. Explain the design and development process of a large system such as an EHR.
<p>Domain IV: Working with Health IT Systems 14%</p>	<ol style="list-style-type: none"> 1. Identify common components of an HIT system and types of HIT applications (E-Mar, POE, PACS, ADT, Lab, DSS, Registries, Billing/Coding, etc, and acute care, community health, public health, small provider practices, etc.). 2. Describe data flows across HIT systems and implication of standards. 3. Identify root causes of HIT-induced error (i.e. usability, workflow interference, system error, etc.) and suggest solutions. 4. Assess the strengths and weaknesses of identified solutions to identified HIT problems (to emphasize the reality of “solutions” and illustrate the frequent domino effect/unintended consequences of change of an HIT system). 5. Defines usability, describes general usability principles, and relates usability to adoption in relation to HIT. 6. Define and differentiate security, confidentiality, and privacy and identify common threats. 7. Demonstrate beginning level competency in general HIT system use.
<p>Domain V: Installation and Maintenance of Health IT Systems 14%</p>	<ol style="list-style-type: none"> 1. Articulate the elements of Health IT systems, including their advantages and disadvantages. 2. Justify criteria to be considered when recommending vendors and software. 3. Design a comprehensive plan to install a health IT system. 4. Design a comprehensive plan to maintain and troubleshoot a health IT system, incorporating system updates and user feedback. 5. Implement project plans by installing and configuring hardware and software, interacting with vendors and users as needed. 6. Verify plan implementation.
<p>Domain VI: Configuring EHRs 14%</p>	<ol style="list-style-type: none"> 1. Describe the process of migration to an electronic health record (EHR) from organizational strategy, planning, analysis of EHR options, decision-making techniques, training, and implementation strategies. 2. Given a case study of a facility moving from a paper health record to an EHR, discuss the migration path from organizational strategy to implementation, including meaningful use criteria.

	<ol style="list-style-type: none"> 3. Discuss the importance and use of clinical decision support systems for clinical and administrative use. 4. Given an EHR system, configure the system to achieve features required for meaningful use, including labs for: <ol style="list-style-type: none"> a. Building of order sets b. Data entry templates c. Generate quality reports d. Implementation of clinical decision support 5. Understand data infrastructure including data architecture, data sets, data repositories, data standards, data types and data dictionaries. 6. Write an RFI/RFP using stated criteria. 7. Evaluate EHR systems to select an EHR most appropriate to an organization and clinical setting.
<p>Domain VII: Professionalism/ Customer Service in the Health Environment 14%</p>	<ol style="list-style-type: none"> 1. Explain key elements of customer service in health IT. 2. Demonstrate appropriate behaviors in simulations of health IT customer service. 3. Demonstrate effective written and oral communication approaches to common communication interactions. 4. Identify core elements of effective communication and techniques to resolve conflicts. 5. Identify ethical and cultural aspects of communication.

HITT 1204 IT for Health Professionals - ONC Component 4

Course Description:

IT for Health Professions is for students without an IT background. It provides a basic overview of computer architecture; data organization, representation and structure; structure of programming languages; networking and data communication. Includes basic terminology of computing. There are no pre-requisites for this course.

Component Objectives:

At the completion of this component, the student will be able to:

1. Learn correct terminology for computing and technology including for hardware, software, networks, Internet and databases
2. Identify commonly used hardware components.
3. Identify commonly used software applications and operating systems.
4. Explain the function and use of programming languages and identify commonly used languages.
5. Define what a database is, explain what querying languages are and identify commonly used database systems.
6. Describe network computing, its benefits and risks, and identify commonly used communications hardware and software components.
7. Identify security risks for computing systems and discuss potential solutions.
8. Explain the design and development process of a software information system such as an EHR.

	Course Objectives:
Unit 1:	<ul style="list-style-type: none">• Define what a computer is.• Describe different types of computers, including PCs, mobile devices and embedded computers.

	<ul style="list-style-type: none"> • Define the common elements of computer systems. • Describe the various hardware and software options for typical desktop, laptop and server systems for home and business use with a focus on healthcare systems. • Explain the development of computers and the Internet, including healthcare systems, up until the present time.
Unit 2:	<ul style="list-style-type: none"> • Define the Internet and how to connect to it. • Define the World Wide Web and how to access it • Write effective search queries for Internet search engines, filter the results and evaluate credibility of information. Discuss security and privacy concerns on the Internet. • Describe ethical issues for the Internet. • Explore online healthcare applications and associated security and privacy issues including HIPAA.
Unit 3:	<ul style="list-style-type: none"> • List the major elements of a computer • Describe how data is stored in memory and in secondary storage • Describe how data is represented in binary notation • Describe the function of the central processing unit (CPU) of the computer • Describe how data is input/output from a computer • Describe how the elements of a computer system work together • Explain how specialized architectures and embedded systems are used in healthcare settings
Unit 4:	<ul style="list-style-type: none"> • Define application vs. system software. • Give examples of application software focusing on healthcare systems. • Describe the functions of system software. • List different types of operating systems. • Explain the purpose and usage of file systems.
Unit 5:	<ul style="list-style-type: none"> • Define the purpose of programming languages. • Differentiate between the different types of programming languages and list commonly used ones. • Explain the compiling and interpreting process for computer programs. • Learn basic programming concepts including variable declarations, assignment statements, expressions, conditional statements and loops. • Describe advanced programming concepts including objects and modularity.
Unit 6:	<ul style="list-style-type: none"> • Define and describe the purpose of databases • Define a relational database • Describe data modeling and normalization • Describe the structured query language (SQL) • Define the basic data operations for relational databases and how to implement them in SQL

	<ul style="list-style-type: none"> • Design a simple relational database and create corresponding SQL commands • Examine the structure of a healthcare database component • Design a simple database and develop querying statements (WECM)
Unit 7:	<ul style="list-style-type: none"> • List and describe the various types of network communications and network addressing • List and define the different types of networks • Describe different network topologies • List and describe different network standards and protocols • Describe wireless communication • List and describe network hardware • Write simple computer programs including constructs such as conditional statements, loops, functions, objects and simple data structures (WECM)
Unit 8:	<ul style="list-style-type: none"> • List and describe common security concerns • Describe safeguards against common security concerns • Describe security concerns for wireless networks and how to address them • List security concerns/regulations for health care applications • Describe security safeguards used for health care applications • Identify IT security risks and potential solutions. (WECM)
Unit 9:	<ul style="list-style-type: none"> • Define an information system, how one is used and list examples. • Describe the components of an information system. • Describe the process developing an information system. • Describe the different types of testing and when testing should occur. • Describe how information systems are supported and maintained over time. • Describe specialized information systems. • Explain how information systems are used in healthcare. • Explain the design and development process of a large system integrating an EHR (WECM) • Use IT terminology in communications (WECM)
Unit 10:	<ul style="list-style-type: none"> • Describe the latest advances in technology. • Discuss the implications of advances in technology for healthcare systems, including potential risks.

Most recent highlights and updates to this course include the addition of SQL fundamentals, updates on software packages and programming languages, security issues for health information, embedded and mobile computing, ubiquitous computing, latest toolkit from HealthcareIT.gov.

HITT 1205 Language of Healthcare and Public Health / Medical Terminology – ONC
Component 3

Course Description:

An explanation of specific medical terminology used by workers in health care and public health. This is NOT a course in data representation or standards.

Component Objectives:

At the completion of this component, the student will be able to:

1. Define, understand and correctly pronounce medical terms related to each of the major body systems.
2. Define commonly used terms in public health, nursing, health information technology, and clinical vocabularies & terminologies related to the implementation of electronic health records.
3. Identify the purpose and uses of pertinent health care terminologies in the electronic health record.
4. Demonstrate the ability to integrate and use health care terminology in the various health information technology roles.

	Course Objectives:
Unit 1:	<ul style="list-style-type: none"> • Recognize prefixes, suffixes, word roots, and combining forms
Unit 2:	<ul style="list-style-type: none"> • Write the meanings of Chapter 2 word parts, or match word parts with their meanings. • Match medical specialists with the areas in which they specialize. • Identify the common medical conditions associated with each specialty.
Unit 3:	<ul style="list-style-type: none"> • Write the meaning of Chapter 3 word parts, or match word parts with their meanings. • Use prefixes for numbers, quantities, position, and direction to write medical terms.
Unit 4:	<ul style="list-style-type: none"> • Identify the difference between signs and symptoms. • List the vital signs and the four basic examination procedures. • Match diagnostic terms with their meanings.
Unit 5:	<ul style="list-style-type: none"> • Recognize the relationship of cells, tissues, and organs. • List four types of tissue and the major body systems, and recognize terms for their abnormal development.
Unit 6:	<ul style="list-style-type: none"> • Recognize or write the functions of the musculoskeletal system. • Recognize or write the meanings of Chapter 6 word parts and use them to build and analyze medical terms. • Write terms for selected structures of the musculoskeletal system, or match terms with their descriptions.
Unit 7:	<ul style="list-style-type: none"> • Recognize or write the functions of the circulatory system. • Recognize or write meanings of Chapter 7 word parts and use them to

	build and analyze medical terms. Write terms for selected structures of the cardiovascular system, or match terms with their description.
Unit 8:	<ul style="list-style-type: none"> • Recognize or write the functions of the respiratory system. • Recognize or write the meanings of Chapter 8 word parts and use them to build and analyze terms. • Write terms for selected structures of the respiratory system, or match them with their descriptions.
Unit 9:	<ul style="list-style-type: none"> • Recognize or write the functions of the digestive system. • Recognize or write the meanings of Chapter 9 word parts and use them to build and analyze terms. Write terms for selected structures of the digestive system, or match them with their descriptions.
Unit 10:	<ul style="list-style-type: none"> • Recognize or write the functions of the urinary system. • Recognize or write the meanings of Chapter 10 word parts and use them to build and analyze terms. Write terms for selected structures of the urinary system, or match them with their descriptions.
Unit 11:	<ul style="list-style-type: none"> • Recognize or write the functions of the reproductive system. • Recognize or write the meanings of Chapter 11 word parts and use them to build and analyze terms. Write terms for selected structures of the female reproductive system and their associated functions, or match them with their descriptions.
Unit 12:	<ul style="list-style-type: none"> • Recognize or write the functions of the integumentary system. • Recognize or write the meanings of Chapter 12 word parts and use them to build and analyze terms. Write terms for selected structures of the integumentary system, or match them with their descriptions.
Unit 13:	<ul style="list-style-type: none"> • Recognize or write the functions of the nervous system. • Recognize or write the meanings of Chapter 13 word parts and use them to build and analyze terms. Write terms for select structures of the nervous system, or match them with their descriptions.
Unit 14:	<ul style="list-style-type: none"> • Recognize or write the function of the peripheral nervous system. • List or recognize the names of the special sense organs. • Write or recognize the brain's interpretation(s) of the special sense organs. • Recognize or write the meanings of Chapter 14 word parts and use them to build or analyze terms. • Write terms for selected structures of the sense organs or match terms with their descriptions. • Write the names of the diagnostic terms and pathologies related to the special sense organs. • Match surgical and therapeutic interventions in Chapter 14, or write the names of the interventions when given their descriptions. • Spell terms pertaining to the special senses Lesson Preparation Checklist.
Unit 15:	<ul style="list-style-type: none"> • Recognize or write the functions of the endocrine system.

	<ul style="list-style-type: none"> Recognize or write the meanings of Chapter 15 word parts and use them to build and analyze terms. Write terms for selected structures of the endocrine system and their associated hormones and functions, or match them with their descriptions.
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Most recent highlights and updates to this course include updates on discussion boards pertaining to building medical terminology from parts, pathogenic microorganisms, accessory organs of digestion, and irregularities in vision.

HITT 1212 History of Health IT – ONC Component 5

Course Description:

This course traces the development of IT in health care and public health, beginning with the experiments of the 1950’s and 1960’s and accumulating in the HITECH Act of 2009, including the introduction of the concept of “meaningful use” of electronic health records.

Component Objectives:

At the completion of this component, the student will be able to:

1. Explain the rationale for elements of the HITECH Act in terms of the history of health IT
2. Describe the background of today’s health IT landscape including EHR, HIE, CDS, applications in Public Health, relevant professional organizations
3. Describe the history of regulation of Health IT in the U.S.
4. Describe how legislation related to privacy and security of electronic health information has evolved in the US.
5. Discuss how financial incentives for use of HIT have changed over time.

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> Discuss the enduring values that have been foci for HIT stakeholders from the perspectives of healthcare organizations, community and practicing physicians, and academic physicians, information systems personnel, and medical informaticians. Discuss how the social, educational, and professional environments in healthcare influence these values. Discuss the impact of key developments in the 1950’s and 1960’s including Sputnik, Medicare/Medicaid legislation, medical research, and the Civil Rights legislation on healthcare. Describe the characteristics of the healthcare environment and the use of computers in healthcare in the 50’s and 60’s. Discuss how the problem-oriented medical record changed the structure of medical records. Discuss the impact that increased access to healthcare had on the use of

	<p>computers in healthcare in the 1970's.</p> <ul style="list-style-type: none"> • Describe how key informatics innovations such as the problem-oriented medical record, Medline, early EMRs and CDSS relate to the general healthcare environment of the 1970's. • Describe some of the early forerunners of today's EHR including OSTAR, TMR, and the Regenstried CPRS. • Describe early clinical decision support systems including Internist-1, Mycin and the HELP system. • Discuss the impact that the cost containment focus of the 1980's had on the use of health information technology. • Discuss the healthcare environment of the 1980's and its impact on the types of informatics applications developed during this time period. • Discuss the increasing professionalization of informaticians and HIT professionals in the 1980's including training programs and professional organizations.
Unit 2:	<ul style="list-style-type: none"> • Discuss factors that led to increasing clinical use of computers from 1990-2009. • Discuss key influences on health IT developments including the Internet, HIPAA, the Human Genome project, and the Institute of Medicine Quality Chasm series • Discuss the focus of health IT in the late 90's up to the present • Discuss the role of health IT in clinical and translational research and personalized medicine. • Discuss why there is more receptivity to the use of Health IT now than during the previous 50 years.
Unit 3:	<ul style="list-style-type: none"> • Discuss the barriers to adoption of Health IT that the HITECH Act is designed to address. • Discuss how the following ARRA/HITECH requirements relate to previous development in health IT <ul style="list-style-type: none"> ♦ Certified electronic health records ♦ Concept of meaningful use including e-prescribing, clinical decision support, interoperability and HIE, structured documentation of quality measures ♦ Incentives to providers. ♦ Education of clinicians ♦ Workforce development • Give examples of how the HITECH provisions support healthcare reform efforts
Unit 4:	<ul style="list-style-type: none"> • Discuss how the sub-discipline of public health informatics has evolved over time • Describe how HIT can be used to enhance public health practice • List potential ethically, social, and political issues associated with the

	development of HIT applications for public health purposes
Unit 5:	<ul style="list-style-type: none"> • Discuss how HIT tools have evolved to support the practice of nursing • List common nursing HIT applications and describe how they have evolved over time.
Unit 6:	<ul style="list-style-type: none"> • Name some early examples of electronic medical records. • Discuss lessons learned from the early EHR implementations • Discuss how the attributes that were identified for a computer-based patient record in the 1991 Institute of Medicine Report relate to the concept of meaningful use.
Unit 7:	<ul style="list-style-type: none"> • Describe various types of clinical decision support (CDS) systems. • Discuss the evolution of clinical decision support from expert system research. • Discuss the changes in focus of clinical decision support from the 1980's to the present. • Discuss the change in architecture and mode of access of clinical decision support systems from the 1980's to the present.
Unit 8:	<ul style="list-style-type: none"> • Explain how the evolving capabilities of CPOE systems impact quality and patient safety in the hospital setting • Explain how the evolving capabilities of e-prescribing systems impact quality and patient safety in the ambulatory setting
Unit 9:	<ul style="list-style-type: none"> • Describe historical U.S. efforts at realizing health information exchange • Define community health information networks (CHINs) and regional health information organizations (RHIOs) • Describe why CHINs failed in the 1990's • Describe the concept of RHIOs and articulate how they relate to National Health Information Network (NHIN)
Unit 10:	<ul style="list-style-type: none"> • Discuss the reasons why the administrative simplification provisions were attached to the original HIPAA legislation. • Explain the five principles underlying the HIPAA privacy rule. • Discuss the reasons why the privacy rule was an action of the executive, not the legislative branch of Congress. • Describe security recommendations in the 1997 report "For the Record." • Describe the major changes in privacy and security requirements as a result of HITECH and the reasons why the changes were needed.
Unit 11:	<ul style="list-style-type: none"> • Discuss the history of FDA involvement in the regulation of clinical software. • Describe the origins, focus and activities of CCHIT. • Discuss the changes in the EHR certification process as a result of the HITECH Act. • Discuss the recent efforts to improve the safety of EHRs
Unit 12:	<ul style="list-style-type: none"> • Discuss the developments in mobile computing that have enabled portable

	<p>computers to be used in health care settings.</p> <ul style="list-style-type: none"> List the benefits of using mobile computers in the clinical setting, and discuss how these benefits have developed over time. Give examples of three applications for mobile computers in healthcare
Unit 13:	<ul style="list-style-type: none"> Define telemedicine. Describe the differences between telemedicine and telehealth. Discuss key developments in the history of telemedicine. Identify and describe at least two current applications of telemedicine.
Unit 14:	<ul style="list-style-type: none"> Describe conditions and notable publications concerning patient safety and quality improvement from 1959 to the present. Describe the background to the Institute of Medicine reports on Patient Safety Summarize the main findings from several Institute of Medicine reports on quality, patient safety, and health information technology (HIT). Describe various ways in which HIT has evolved to improve quality or enhance patient safety.
Unit 15:	<ul style="list-style-type: none"> Discuss the evolution of incentives for adoption of HIT. Discuss direct and indirect ways in which health care payors can influence the adoption of HIT. Describe past and current strategies employed by payors to influence HIT adoption.
Unit 16:	<ul style="list-style-type: none"> Describe the background and original constituencies of AMIA, HIMSS, and AHIMA. Describe the changes in major interests that have occurred at AMIA, HIMSS, and AHIMA over time. Describe the origins, current focus, and relationships among the following standards development organizations: HL-7, HITSP, ONC Health IT Standards Committee.

Most recent highlights and updates to this course includes Health Information Exchange (HIE), addition of nursing informatics research and HIPAA and Meaningful Use reporting.

HITT 1271 Professionalism/Customer Service in the Health Environment – ONC Component 16

Course Description:

Development of skills necessary to communicate effectively across the full range of roles that will be encountered in health care and public health settings. There are no pre-requisites for this course.

Component Objectives:

At the completion of this component, the student will be able to:

1. Explain key elements of customer service in health IT.
2. Demonstrate appropriate behaviors in simulations of health IT customer service.
3. Demonstrate effective written and oral communication approaches to common communication interactions.
4. Identify core elements of effective communication and techniques to resolve conflicts.
5. Identify ethical and cultural aspects of communication.

	Course Objectives:
Unit 1:	<ul style="list-style-type: none"> • Describe the definitions of customer service • Identify customers’ needs based on context • Discuss different metrics to measure customer service in Healthcare IT
Unit 2:	<ul style="list-style-type: none"> • Define contextual norms expected in healthcare organizations • Discuss the importance of dress, deportment, demeanor, and grooming
Unit 3:	<ul style="list-style-type: none"> • Explain the purpose and goal of professional communication • Describe what is meant by effective communication • Discuss what is meant by ineffective communication • Identify communication needs of common roles in healthcare • Describe Disability Etiquette’s contribution to professional communication
Unit 4:	<ul style="list-style-type: none"> • Discuss the definition of communication • Discuss assumptions used in communication • Discuss the communication models from general to health-specific • Discuss variables used in communication • Define nonverbal communications • Describe how nonverbal communication functions in the human communication process • Describe specific dimensions and give examples of nonverbal communication • Discuss communication in paper-based and electronic formats • Discuss personal communication in the work setting • Discuss listening skills • Discuss diversity
Unit 5:	<ul style="list-style-type: none"> • Characterize the importance of and guidelines associated with infection control. • Relate protecting yourself and others with standard precautions • Explain HIPAA and communication
Unit 6:	<ul style="list-style-type: none"> • Define Group communication and tiered characteristics • Categorize goals, norms and cohesiveness of groups • Explain Stages of team communication • Understand Communication networks and sociograms
Unit 7:	<ul style="list-style-type: none"> • Describe Dimensions of conflict • Define conflict

	<ul style="list-style-type: none"> • Explain approaches used in conflict resolution • Discuss conflict resolution styles • Describe communication strategies to resolve conflict • Discuss sources and strategies addressing technical implementation conflict
Unit 8:	<ul style="list-style-type: none"> • Characterize dimensions of Ethics • Identify major characteristics of Culture • Distinguish elements in intercultural communication • Perform effective intercultural communication
Unit 9:	<ul style="list-style-type: none"> • Describe appropriate use of personal communication devices in the healthcare workplace • Discuss the impact of inappropriate use of personal communication devices in the healthcare workplace • Identify the differences between personal and professional communications

Most recent highlights and updates to this course include HIPAA privacy regulations and release of information, team building and behavioral modification and inter-cultural communications.

HITT 1280 Cooperative Education / Apprenticeship – No ONC Component

Course Description:

Career-related supervised activities at site in an affiliated health care facility where students may achieve stated competency levels in basic health information management functions. The activities are in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. The two specializations are either Data Quality Manager or Information Technology Liaison.

Course Objectives/Goals:

As outlined in the learning plan, apply the theory, concepts, and skills involving specialized materials, tools, equipment, procedures, regulations, laws, and interactions within and among political, economic, environmental, social, and legal systems associated with the occupation and the business/industry and will demonstrate legal and ethical behavior, safety practices, interpersonal and teamwork skills, and appropriate written and verbal communication skills using the terminology of the occupation and the business/industry. Focus of activities will be based on competencies associated with the CHTS examination.

Most recent highlights and updates to this course include separating the courses into sections of data quality management and Information Technology Liaison and capstone project reassessment.

HITT 1311 Health Information Systems – ONC Component 6

Course Description:

Introduction to health IT standards, health-related data structures, software applications, and enterprise architecture in health care and public health. No pre-requisites required.

Component Objectives:

At the completion of this component, the student will be able to:

1. Describe general functions, purposes and benefits of health information systems in various health care settings
2. Describe the federal initiatives and other significant developments that have influenced the evolution and adoption of health information systems
3. Compare/Contrast different types of health information systems in terms of their ability to meet the needs of various types of health care enterprises
4. Explain how electronic health records affect patient safety, quality care, efficiency, productivity, and reporting/documentation mechanisms
5. Propose strategies to minimize major barriers to the adoption of electronic health records
6. Explain how the principles of health care data exchange and health care data standards relate to patient care, productivity and data analysis

	Course Objectives:
Unit 1:	<ul style="list-style-type: none"> • Define information management, information system (technology) and informatics • Explain the basic theoretical concept that underlies informatics practice • Define the meaning of biomedical and health informatics as a field of study • Describe the biomedical informatics areas of applications • Summarize the informatics drivers and trends • State the professional roles and skills of health informaticians • Identify how health informaticians process data into information and knowledge for health care tasks with the support of information technology to improve patient care
Unit 2:	<ul style="list-style-type: none"> • Define the concept of an information system and its characteristics • Describe the different types of information systems • Describe various types of technologies that support health care information systems • Examine the challenges presented by emerging trends in information technology, social media, and global communications • Discuss the advantages and disadvantages of using the Internet as a platform for health care applications
Unit 3:	<ul style="list-style-type: none"> • State the similarities and differences between an electronic medical record (EMR) and electronic health record (EHR)

	<ul style="list-style-type: none"> • Identify attributes and functions of an EHR • Describe the perspectives of health care providers and the public regarding acceptance of or issues with an EHR, which can serve as facilitators of or major barriers to its adoption • Explain how the use of an EHR can affect patient care safety, efficiency of care practices, and patient outcomes • Discuss how Health Information Exchange (HIE) and Nationwide Health Information Network (NHIN) impact health care delivery and the practice of health care providers • Outline issues regarding governmental regulation of EHR systems, such as meaningful use of interoperable health information technology and a qualified EHR • Summarize how the Institute of Medicine’s Vision for 21st Century Health Care and Wellness may impact health management information systems • Identify how ongoing developments in biomedical informatics can affect future uses and challenges related to health information systems
Unit 4:	<ul style="list-style-type: none"> • Describe the purpose, attributes and functions of CPOE • Explain ways in which CPOE is currently being used in health care • Discuss the major value to CPOE adoption • Identify common barriers to CPOE adoption • Identify how CPOE can affect patient care safety, quality and efficiency, as well as patient outcomes
Unit 5:	<ul style="list-style-type: none"> • Describe the history and evolution of clinical decision support • Describe the fundamental requirements of effective clinical decision support systems • Discuss how clinical practice guidelines and evidence-based practice affect clinical decision support systems • Identify the challenges and barriers to building and using clinical decision support systems • Discuss legal and regulatory considerations related to the distribution of clinical decision support systems • Describe current initiatives that will impact the future and effectiveness of clinical decision support systems
Unit 6:	<ul style="list-style-type: none"> • Describe the purpose, attributes, and functions of patient monitoring systems • Discuss ways in which automation can improve the quality of patient care • Analyze how the integration of data from many sources assists in making clinical decisions • Discuss how telehealth communication technologies support clinical care • Discuss the effectiveness and economic benefit of telehealth • Examine how smart technology in the home and remote links to health

	information systems can enhance the quality of patient care
Unit 7:	<ul style="list-style-type: none"> • Examine the purposes, processes, and management issues • Understand the economic and technological factors associated with digital displays • Describe the major challenges • Describe the future directions
Unit 8:	<ul style="list-style-type: none"> • Explain how current and emerging technologies have impacted and may continue to affect consumer health informatics • Describe the role of genomics in consumer health informatics • Describe the emergence of personal health records and their implications • Discuss how consumerism influences the ongoing development and use of health information systems
Unit 9:	<ul style="list-style-type: none"> • Explain applications that need to be integrated in health care information systems • Describe the strategies used by health care organizations to ensure integration of functions • Discuss the critical elements needed to integrate billing, financial, and clinical systems • Discuss the core elements of a Master Patient Index (MPI) • Describe current trends to establish a Unique Patient Identifier (UPI)

Most recent highlights and updates to this course include the addition more information of health informatics, CPOE best practices, status of telemedicine, top ten medical technologies 2015, social media and healthcare, health information exchanges, best practices on security and updates on the current status of meaningful use.

HITT 2222 Working in Teams – ONC Component 17

Course Description:

An experiential course that helps trainees become “team players” by understanding their roles, the importance of communication, and group cohesion.

Component Objectives:

At the completion of this component, the student will be able to:

1. Establish and monitor ground rules, or rules of engagement, that serve as behavioral guidelines for members of teams involved in HIT.
2. Develop an HIT action plan that can be easily adapted to changing situations, environments, and goals across a variety of health and healthcare settings.
3. Communicate a clearly articulated position in writing and speech.
4. Incorporate diversity in values, critical thinking, and judgments that amplifies the best of individual performance toward the HIT team mission.

5. Provide leadership for continuous assessment and learning on practices, processes, and outcomes of the HIT team mission.
 Develop a sustaining framework that maximizes the integrated power of teams while recognizing excellence in individual performance of various stakeholders involved in HIT (patients, families, communities, nation, etc.).

	Course Objectives:
Unit 1:	<ul style="list-style-type: none"> Describe the characteristics of an effective team and work group. Describe and differentiate roles of IT health care professionals in teams. Describe the value of teams and the importance of collaboration for the HIT professional in teams.
Unit 2:	<ul style="list-style-type: none"> Describe stages of team development. Identify the needs of the team at each described stage. Establish and clarify common goals and purpose for a team. Relate key characteristics of effective team members. List key factors to maintain HIT teams.
Unit 3:	<ul style="list-style-type: none"> Create and describe SMART ground rules. Develop and refine a team action plan. Establish ground rules and an initial action plan for an HIT team.
Unit 4:	<ul style="list-style-type: none"> Clarify individual roles relative to the tasks and processes assigned to a team Identify strengths and limitations relative to the tasks and process when developing a team Define specific roles and responsibilities for the fulfillment of the team mission Define expectations to support the team action plan
Unit 5:	<ul style="list-style-type: none"> Compare problem-solving techniques (mind maps, SWOT analysis, swim lanes, fish bones diagrams) when developing teams. Differentiate between a team task versus an individual task.
Unit 6:	<ul style="list-style-type: none"> Develop skills for clear communication and understanding of others Provide appropriate feedback to others Develop and deliver appropriate feedforward Communicate in ways that help promote positive change for your team.
Unit 7:	<ul style="list-style-type: none"> Develop and implement standards for shared leadership roles in complex, stressful, and often hierarchical health related environments. Differentiate progression from self-awareness to self-leadership to team leadership. Demonstrate collective, concurrent, collaborative, and compassionate activity.
Unit 8:	<ul style="list-style-type: none"> Demonstrate skillful use of collaborative tools and techniques. Develop a system to provide full transparency of key information related

	<ul style="list-style-type: none"> to actions of the HIT team. • Design an information sharing structure that supports high performance and knowledge exchange.
Unit 9:	<ul style="list-style-type: none"> • Select appropriate communication tools available for global and diverse team collaboration. • Predict future tools that could be used in the healthcare arena to collaborate and connect health professionals. • Infer the future face of the healthcare field where team collaboration and patient-centeredness is a fundamental practice.
Unit 10:	<ul style="list-style-type: none"> • Team Dysfunction • Organizational Structure and Culture • Symptoms of Dysfunction • Strategies to Manage Dysfunctional Teams
Unit 11:	<ul style="list-style-type: none"> • Develop a working knowledge of high performance. • Identify key criteria for high performance. • Propose a team structure that enables high performance.
Unit 12:	<ul style="list-style-type: none"> • Classify the formative stage of a team. • Apply strategies to move a team into the next formative stage. • Reposition a team for a new challenge.

Most recent highlights and updates to this course include the addition of supplemental learning activities on adult learning principles, common instructional design problems, how to create lesson plans and unique presentations, different forms of assessment and how to create assessments, training methods for the workplace, instructional media and design.

HITT 2224 Usability and Human Factors in Health Professions – ONC Component 15

Course Description:

Discussion of rapid prototyping, user-centered design and evaluation and usability. Includes effects of new technology and workflow on downstream processes. No pre-requisites are required.

Component Objectives:

Upon completion of this component, the student will be able to:

1. Articulate a systems approach to usability and human factors as it applies to health information technology.
2. Explain the cognitive consequences of health information technology on clinical performance.

3. Identify the consequences of suboptimal design in the delivery of healthcare.
4. Apply methods of cognitive research, sources of usability evidence, and principles of user-centered design to decisions regarding systems evaluation, technology evaluation, and iterative design, given a population of users.
5. Apply requirements engineering methods to inform design and technology selection.
6. Demonstrate concept knowledge of cognition and human performance models in their relevance to systems evaluation methods.
7. Apply concept knowledge of cognitive, physical and organization ergonomics to human factors engineering.
8. Select the most appropriate usability evaluation method, given particular system, setting, and development phase.
9. Apply principles of usability and design to critiquing EHR systems and to making recommendations for iterative improvement.
10. Diagnose problems associated with a clinical decision support system.
11. Apply cognitive methods of analysis to medical device testing.
12. Evaluate user interface designs using cognitive methods of analysis, usability testing, and Nielsen’s heuristic evaluation method.
13. Diagnose various types of error and create or select potential solutions.
14. Select appropriate technology input methods given different technology uses, user populations and contexts.
15. Describe how information visualization can support and enhance the representation of trends and aggregate data.
16. Describe the role of mobile and ubiquitous computing in healthcare.

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> • Explain the importance of technology in health. • Describe the contributions of Human-Computer interaction to the Health field • De scribe the seven stages of User Activity in Norman’s Theory of Action • Demonstrate concept knowledge of principles of user-centered design, methods of cognitive research, and sources of usability evidence. • Apply the principles of user-centered design to address the challenges to effective design • Compare and contrast usability evaluation methods. • Select the most appropriate usability evaluation method (WECM) • Apply methods of cognitive and human performance models in their relevance to systems evaluation methods (WECM) • Identify and differentiate various types of errors in medicine • Identify patient safety issues in the workplace and at home
Unit 2:	<ul style="list-style-type: none"> • Explain the role of requirements gathering in usability evaluation. • Identify the uses, advantages, and disadvantages of data collection • Methods used for requirements gathering

	<ul style="list-style-type: none"> • Identify contextual design principles as they apply to the healthcare setting • Describe the methods to interpret results of data collection
Unit 3:	<ul style="list-style-type: none"> • Define the concept of cognitive engineering • Describe the representational effect as it applies to human computer interaction and web design • Describe how humans process information and obtain skills • Describe the Gestalt principles of perception and their relevance to human computer interaction and cognitive theory • Describe the processes of memory and their relationship to web-design • Describe the cognitive constructs for mental representation • Explain how cognition and human performance models should inform iterative design processes
Unit 4:	<ul style="list-style-type: none"> • Distinguish between human factors and human computer interactions (HCI) as they apply to usability • Explain how cognitive, physical and organization ergonomics can be applied to human factors engineering • Select technology input methods given different technology uses, user populations and contexts (WECM) • Apply concept knowledge of cognitive, physical and organization ergonomics to human factors engineering (WECM) • Describe how the concepts of mental workload, selective attention and information overload affect usability • Describe the different dimensions of the concept of human error • Describe a systems-centered approach to error and patient safety • Apply methods for measuring mental workload and information overload • Describe how human factors analysis can be applied to the study of medical devices
Unit 5:	<ul style="list-style-type: none"> • Describe the importance of usability in relation to health information technologies • Articulate a systems approach to usability and human factors as it applies to health information technology (WECM) • List and describe usability evaluation methods • Given a situation and set of goals, determine which usability evaluation method would be most appropriate and effective • Describe the appropriate tasks for a usability test • Describe the usability testing environment, required equipment, logistics, and materials • Conduct a cognitive walkthrough
Unit 6:	<ul style="list-style-type: none"> • Discuss the role of usability testing, training and implementation of electronic health records • Describe and define usability as it pertains to the EHR (HIMSS document)

	<ul style="list-style-type: none"> • Explain the challenges of EHR design and usability in typical workflow • Identify a set of well-established principles of usability and design and describe their application to EHRs (HIMSS document) • Identify and explain usability methods for enhancing efficiency of use and minimizing likelihood of user error (HIMSS document) • Explain how user-centered design can enhance adoption of EHRs • Describe Web 2.0 and novel concepts in system design • Identify potential methods of assessing and rating EHR usability when selecting an appropriate EHR system (HIMSS document) • Apply principles of usability and design to critiquing EHR systems (WECM)
Unit 7:	<ul style="list-style-type: none"> • Understand the cognitive basis for decision making and its effect on clinical errors • Discuss the role of usability testing, training and implementation of clinical decision support • Describe and define usability as it pertains to clinical decision support • Identify examples of usability barriers to adoption of clinical decision support • Identify a set of well-established principles of usability and design and describe their application to clinical decision support • Explain the impact of health information technologies on clinical performance (WECM) • Diagnose problems associated with clinical decision support systems (WECM)
Unit 8:	<ul style="list-style-type: none"> • Explain a user-centered design approach • Define conceptual models • Explain the iterative design process • Make recommendations for iterative movement (WECM) • Describe requirements analysis and cognitive task analysis • Characterize the role of prototypes in design • Describe the principles of participatory design • Describe principles of sound design to support usability • Describe how Nielsen’s heuristics and design principles apply to user interface design • Explain the difference between low fidelity and high fidelity prototypes and when it would be appropriate to use one versus the other • Evaluate user interface designs using cognitive methods of analysis, usability testing and heuristic evaluation (WECM) • Unit Topics <ul style="list-style-type: none"> ♦ Translating requirements into design ♦ Nielsen’s heuristics and design principles ♦ Classification exercise (card sorting)

	<ul style="list-style-type: none"> ◆ Participatory design ◆ Low fidelity prototypes ◆ High fidelity prototypes ◆ Iterative design
Unit 9:	<ul style="list-style-type: none"> • History of Ubiquitous computing and basic principles • Describe the role of mobile and ubiquitous computing in healthcare • Describe some of the technical Challenges
Unit 10 and Unit 11:	<ul style="list-style-type: none"> • Define “workflow analysis” and methods for examining and addressing human errors • Design a workflow analysis study • Identify common sources of error documented in research studies in medicine • Apply the cognitive taxonomy of errors • Apply principles underlying the design of healthcare systems for safety
Unit 12:	<ul style="list-style-type: none"> • Identify/describe the role of information visualization and describe its purpose in enhancing usability of health technology. • Describe how information visualization can support and enhance the representation of trends and aggregate data (WECM) • Describe how information visualization can support and enhance the representation of trends and aggregate data

Most recent highlights and updates to this course include the addition of AHRQ safety tool kit, data visualization tools, guidelines for usability, quantitative and qualitative statistics, workflow and electronic health records and the status of mobile computing.

HITT 2311 Configuring Electronic Health Records – ONC Component 11

Course Description:

This class provides a practical experience with a laboratory component (utilizing Neehr Perfect) that will address approaches to accessing, selecting and configuring EHRs to meet the specific needs of customers and end users.

Component Objectives:

At the completion of this component, the student will be able to:

1. Describe the process of migration to an electronic health record (EHR) from the perspectives of organizational strategy, planning, analysis of EHR options, decision-making techniques, training, and implementation strategies.
2. Discuss the migration path from a paper to an electronic health record with an emphasis on organizational strategy to implementation, including meaningful use criteria.
3. Discuss the importance and use of clinical decision support systems for clinical and administrative use.

4. Given an EHR system, configure the system to achieve features required for meaningful use. The course includes VistA simulation EHR environment lab exercises for:
 - a. Patient care clinical workflow
 - b. Implementing clinical decision support
 - c. Building order sets
 - d. Utilizing data entry templates
 - e. Health summary and clinical reminder reports
5. Understand clinical workflows from multiple clinician perspectives, and in different clinical settings.
6. Understand concepts of privacy and security as applied to the EHR, including regulatory frameworks, risk management, authentication and authorization, user passwords, and physical security of systems.
7. Describe security issues with mobile and medical devices, and elements of disaster preparedness and disaster recovery.
8. Discuss the migration path from a paper to an electronic health record with an emphasis on organizational strategy to implementation, including meaningful use criteria.

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> • Describe the process of initial planning, including identification of stakeholders, champions, management and implementation teams, and determining appropriate members for a steering committee (Lecture a) • Develop a timeline for choosing and implementing an electronic health record, including defining the scope of implementation, budget estimates, and additional critical steps to build a basic strategic plan for implementation (Lecture a, b) • Develop functional requirements, including a workflow analysis and a gap analysis, and recognizing when to bring in expertise (Lecture a) • Develop and applying criteria for selecting an appropriate vendor for the electronic health record including (Lecture b) • Generate an RFI/RFP • Select an appropriate system, including utilizing an appropriate ranking model • Generate interface requirements • Compare and contrast EHR solutions (e.g. locally hosted versus cloud solutions) • Negotiate a contract • Develop a training plan
Unit 2:	<ul style="list-style-type: none"> • Register a patient in a VistA simulation EHR environment • Enter vitals and chief complaint as a Medical Assistant in a VistA simulation EHR environment • Enter a progress note as a Physician in a VistA simulation EHR environment • Enter nursing notes and implement physician orders as a Registered Nurse

	<p>in a VistA simulation EHR environment</p> <ul style="list-style-type: none"> • Understand the importance of clinical workflows in the functioning of EHRs
Unit 3:	<ul style="list-style-type: none"> • Define and discuss clinical decision support • Describe, view and create Alerts/Notifications in a VistA simulation EHR environment • Describe, view and create Order Checks in a VistA simulation EHR environment • Describe, view and resolve Reminders in a VistA simulation EHR environment • Discuss the value of these EHR functions as clinical decision support tools
Unit 4:	<ul style="list-style-type: none"> • Define and describe an order set • Describe the benefits and costs associated with order sets • Demonstrate the ability to build a variety of order sets in the VistA simulation EHR environment
Unit 5:	<ul style="list-style-type: none"> • Access and use the template editor • Effectively use the different field controls to promote data quality and efficiency of data entry • Design, create and view Personal and Shared Templates for data entry • Describe how the effective use of data entry templates supports quality care, patient safety and efficiency
Unit 6:	<ul style="list-style-type: none"> • Design, view and create Health Summary reports in the VistA simulation EHR environment • Design, view and create Clinical Reminder reports in the VistA simulation EHR environment • Design, view and create ad hoc reports • Describe how quality reporting functions in an EHR supports quality care, patient safety and efficiency • Define the attributes of quality information
Unit 7:	<ul style="list-style-type: none"> • Compare and contrast the concepts of privacy and security • List the regulatory frameworks for an EHR • Describe the concepts and requirements for risk management • Describe authentication, authorization and accounting • Describe passwords and multi-factor authentication and their associated issues • Describe issues with portable devices • Describe elements of disaster preparedness and disaster recovery • Describe issues of physical security • Describe malware concepts
Unit 8:	<ul style="list-style-type: none"> • Describe meaningful use (MU) of health information technology in the context of the Health Information Technology for Economic and Clinical Health (HITECH) Act

	<ul style="list-style-type: none"> • Define the criteria for Stage 1 of meaningful use for eligible professionals and eligible hospitals • Demonstrate examples of meaningful use using the Neehr Perfect Electronic Health Record (EHR)
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Most recent highlights and updates to this course include updates each semester taught to all Neehr Perfect assignments (8-different activities for each class) which simulate an electronic health record and its functionalities, as well as Meaningful Use Stage 2 and 3 requirements and forecast.

HITT 2313 Working with Health IT Systems – ONC Component 7

Course Description:

A laboratory component. Students will work with simulated systems using Neehr Perfect with simulated data. As they play the role of practitioners using these systems, they will learn what is happening “under the hood.” They will experience threats to security and appreciate the need for standards, high levels of usability, and how errors can occur. Materials must support hands-on experience in computer labs and on-site in health organizations.

Component Objectives:

At the completion of this component, the student will be able to:

1. Identify common components of an HIT system and types of HIT applications (E-Mar, POE, PACS, ADT, Lab, DSS, Registries, Billing/Coding, etc, and acute care, community health, public health, small provider practices, etc.)
2. Describe data flows across HIT systems and implication of standards.
3. Identify root causes of HIT-induced error (i.e. usability, workflow interference, system error, etc.) and suggest solutions.
4. Assess the strengths and weaknesses of identified solutions to identified HIT problems (to emphasize the reality of “solutions” and illustrate the frequent domino effect/unintended consequences of change of an HIT system)
5. Defines usability, describes general usability principles, and relates usability to adoption in relation to HIT.
6. Define and differentiate security, confidentiality, and privacy and identify common threats.
7. Demonstrate beginning level competency in general HIT system use

	Course Objectives:
Unit 1:	<ul style="list-style-type: none"> • Define a system and relate systems concepts to Health IT (HIT) • Discuss specific examples of settings where HIT is used (acute, rural, public health, clinic, office, patient home, etc.)

	<ul style="list-style-type: none"> • Identify common components of a clinical HIT system • Demonstrate beginning level competency in maneuvering the demonstration EHRs
Unit 2:	<ul style="list-style-type: none"> • Identify the health IT functions that support a generic ambulatory patient care process • Identify the health IT functions that support a generic inpatient care process
Unit 3:	<ul style="list-style-type: none"> • Identify common elements of the HIT system • Explain the need for standards and why they exist • Define and differentiate between messaging standards and terminology standards. (transmission VS meaning – very basic) • Compare current efforts to facilitate health information exchange between providers, communities, regions, & nation. (Basic level definitions/descriptions – NHIN, HIEs, etc.)
Unit 4:	<ul style="list-style-type: none"> • Identify characteristics of an effective HIT system • Define and provide examples of how evidence-based practice can be supported in HIT Systems • Define and cite examples of usability / configurability / scalability and reliability in HIT Systems • List and contrast different types of reports/queries (predefined vs. ad hoc) required for internal and external reporting
Unit 5:	<ul style="list-style-type: none"> • Define usability in relation to HIT systems • Explain the impact of HIT usability on user satisfaction, adoption, and workarounds in error rates or unintended consequences • Provide alternatives to HIT usability bottlenecks
Unit 6:	<ul style="list-style-type: none"> • Explain the concept of facilitated error in HIT • Cite examples of situations where HIT systems could increase the potential for user error • Analyze sources of HIT facilitated errors and suggest realistic solutions
Unit 7:	<ul style="list-style-type: none"> • Explain and illustrate privacy, security, and confidentiality in HIT settings. • Identify common threats encountered when using HIT • Formulate strategies to minimize threats to privacy, security, and confidentiality in HIT systems.
Unit 8:	<ul style="list-style-type: none"> • Conduct a basic user needs analysis for a given example situation • Create a plan for training users in a small office practice, a large community clinic, or a single unit in an ambulatory care setting • Identify several potential challenges that may emerge during installation and generate a strategy to solve. (Space, wiring, lack of basic computer literacy in staff, etc.)
Unit 9:	<ul style="list-style-type: none"> • Identify frequently encountered challenges to adoption and implementation of HIT systems

	<ul style="list-style-type: none"> • Design an action plan to address barriers to implementation of an HIT system • Propose solutions to common problems in the implementation of HIT systems.
Unit 10:	<ul style="list-style-type: none"> • Define patient-centered care • Suggest HIT-enabled solutions/strategies to enhance patient involvement in health and healthcare • Assess the effectiveness of HIT systems in supporting patient-centered care • Perform self-assessment of personal beliefs related to HIT and patient-centered care.
Unit 11:	<ul style="list-style-type: none"> • Speculate the relationship between HIT and health reform • Suggest alternative design for usable & supportive HIT • Hypothesize how HIT may intersect with publicly available data to improve health (i.e. point of sale, weather, GIS, foods, etc) • Predict avenues of future innovations in HIT.

Most recent highlights and updates to this course include updates each semester taught to all Neehr Perfect assignments (4-different for each class) which simulate an electronic health record and its functionalities as updates to EHRs and user errors and Health Insurance Portability and Accountability Act (HIPAA) updates.

HITT 2323 Health IT Leadership – ONC Component 18

Course Description:

For those preparing for leadership roles, principles of leadership and effective management of teams. Emphasis on the leadership modes and styles best suited to IT deployment. No pre-requisites are required.

Component Objectives:

At the completion of this component, the student will be able to:

1. Explain leadership traits and theories
2. Recognize leadership’s role in IT and EHR project success and project failure
3. Describe importance of effective leadership of teams
4. Demonstrate team leadership competencies.

	Course Objectives:
Unit 1:	<ul style="list-style-type: none"> • Define leadership • Distinguish between leadership styles in the Blake and Mouton’s Managerial Grid • Define and describe classic leadership theories

	<ul style="list-style-type: none"> • Describe characteristics of classic leaders • Explain leadership traits and theories (WECM)
Unit 2:	<ul style="list-style-type: none"> • Compare and contrast concepts of leadership and management • Describe the concept and importance of developing followership • Discuss challenges of leading in a hybrid HIT organization • Define and discuss the Project Management Institute’s (PMI) three types of organizations • Discuss pros and cons of temporary leadership
Unit 3:	<ul style="list-style-type: none"> • Describe and discuss the role of authority in the HIT environment • Compare and contrast recognized vs. expert authority in context with the healthcare environment • Explain creativity’s role in healthcare • Explain the importance of recognizing and managing the cross-cultural organization • Define emotional intelligence • List and describe the four competencies in social intelligence • Define motivation in the context of the current HIT environment • Distinguish between intrinsic and extrinsic motivation • Describe the role of motivation in group dynamics
Unit 4:	<ul style="list-style-type: none"> • Describe the common traits of effective leaders • Describe skills needed in order for HIT leaders to be effective • Describe the common traits of ineffective leaders • Distinguish between de-motivating and motivating leaders • Discuss ineffective leadership’s role on stress in the work environment
Unit 5:	<ul style="list-style-type: none"> • Describe the importance of an Information Technology Strategic Plan. • Describe a typical IT Planning scenario. • Describe the importance of prioritizing HIT goals. • Recognize leadership’s role in IT and EHR project success and failure (WECM) • List common pitfalls in prioritizing IT investments. • Recognize common IT governance structures.
Unit 6:	<ul style="list-style-type: none"> • Describe the importance of connecting with our external stakeholders • Describe a typical Health Information Exchange (HIE).
Unit 7:	<ul style="list-style-type: none"> • Explore the phenomena of teams in our culture and look at the popularity and necessity of teams in delivering quality healthcare services • Describe the importance of effective team leadership (WECM) • Define a team as compared to a group • Identify the stages of team development • Identify the characteristics of successful teams and team members • Analyze team conflict and performance • Define what we mean by virtual teams

	<ul style="list-style-type: none"> • Explore the guidelines for building and leading successful teams
Unit 8:	<ul style="list-style-type: none"> • Define conflict. • Explore historical views of conflict • Explore conflict as a positive/negative force • Study various styles for handling conflict. • Review ways to promote positive conflict in a group.
Unit 9:	<ul style="list-style-type: none"> • Understand the process for selecting new technology • Understand when to employ some of the most common tools of the trade for evaluating and selecting software • Learn about evaluation aids and how they can affect an evaluation project • Understand some of the accounting basics for software purchases • Understand the process for gathering a team to negotiate a contract • Understand the need for documenting contract goals and objectives • Understand the purpose of a contract and how to participate in negotiation • Understand the process for gathering a team to negotiate a contract • Understand the need for documenting contract goals and objectives • Understand the purpose of a contract and how to participate in negotiation.
Unit 10:	<ul style="list-style-type: none"> • Define change management • Discuss the importance of change management to the success of Healthcare IT system implementations • Describe the effects of introducing or changing information technology in a group or organization • Identify elements critical to successful management of change

Most recent highlights and updates to this course include the addition of the theories of leadership versus management, the importance of emotional intelligence, health information exchanges, principles of leading change, change management, personal leadership styles and the Institute for Healthcare Improvement.

HITT 2326 Project Management for Health Professions – ONC Component 19

Course Description:

General principles of project management tools and techniques that results in the ability to create and follow a project management plan.

Component Objectives:

Upon completion of this component, the student will be able to:

1. Describe factors that are critical to project success.
2. Develop a comprehensive project management plan.
3. Define project scope that reflects stakeholder perspectives and project requirements.
4. Prepare an effective work breakdown structure.
5. Differentiate project life cycle models based on project characteristics.
6. Develop estimates for project cost and schedule.
7. Apply tools and techniques to manage project scope, time, and budget.
8. Plan and implement effective communications with the project team and stakeholders.
9. Differentiate roles of project team members.
10. Select and apply appropriate tools and techniques for risk management, quality management, and change management.

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> • Review the history of project management. • Define what a project is. • Define project management. • Identify reasons that more organizations are implementing HIT projects. • Identify key characteristics for project success and failure. • Describe the range and characteristics of health IT projects. • Analyze project requirements (WECM)
Unit 2:	<ul style="list-style-type: none"> • Identify process groups and knowledge areas used in project management. • Differentiate linear, iterative, adaptive, and agile project life cycles. • Relate life cycle phases to reviews, milestones, and deliverables. • Compare various organizational structures as contexts for managing projects. • Define project life cycles (WECM)
Unit 3:	<ul style="list-style-type: none"> • Identify the key elements of a project environment and HIT landscape. • Outline the needs for projects, how and why they are selected and initiated. • Construct a project charter. • Identify project stakeholders. • Generate a stakeholder register.
Unit 4:	<ul style="list-style-type: none"> • Identify the importance and purpose of effective planning. • Identify and describe each component of the project management plan. • Define and prepare project planning documents.
Unit 5:	<ul style="list-style-type: none"> • Analyze scope to develop the project scope statement. • Elicit stakeholder requirements for the project. • Create a Work Breakdown Structure (WBS).

	<ul style="list-style-type: none"> • Create implementation plans to achieve project requirements (WECM)
Unit 6:	<ul style="list-style-type: none"> • Define project management time activities. • Define project cost management activities. • Define project procurement activities. • Apply project management and change management principles (WECM)
Unit 7:	<ul style="list-style-type: none"> • Assess project risks. • Plan project responses. • Prepare and maintain a risk register. • Develop and execute a risk management plan. • Use tools and techniques for project planning, monitoring, risk management and control (WECM)
Unit 8:	<ul style="list-style-type: none"> • Identify and describe roles of project team members. • Develop the human resources plan. • Acquire, develop, manage, and lead the project team. • Identify project communications responsibilities. • Develop a communications plan. • Discuss team dynamics in relation to project management techniques (WECM)
Unit 9:	<ul style="list-style-type: none"> • Direct project execution. • Track, review, and report project progress and performance. • Monitor and control project baselines. • Manage stakeholder expectations and change requests.
Unit 10:	<ul style="list-style-type: none"> • Develop a quality management plan. • Perform quality assurance • Apply quality control techniques.
Unit 11:	<ul style="list-style-type: none"> • Bring project activities to a close. • Conclude the customer acceptance process. • Document and archive lessons learned. • Update and close out project documents. • Manage transition to operations.

Most recent highlights and updates to this course include Meaningful Use 2015, implementing Meaningful Use Stage 2 and creating Gantt chart to accomplish this, creating stakeholder registries, security risk analysis, project communication and building quality into projects.

HITT 2327 Vendor Specific HIT Systems – ONC Component 14

Course Description:

This course provides an overview of the most popular vendor specific systems highlighting features of each as they would relate to practical deployments, and noting differences between the systems.

Component Objectives:

Upon completion of this component, the student will be able to:

1. Assess and compare common commercial Electronic Health Record (EHR) systems using KLAS ratings in training and organizational decision-making contexts.
2. Apply Certification Commission for Health Information Technology (CCHIT), meaningful use, Joint Commission and National Patient Safety Goals to decisions about commercial EHR vendor selection, when given typical workplace scenarios.
3. Evaluate key factors (costs of an EHR, including capital, licensing, maintenance and staffing, and stakeholder needs) into workplace decisions for selecting vendor-specific systems.
4. Analyze the functionality of a vendor EHR system, given a set of user needs.
5. Compare database architectures employed by different vendor applications to evaluate how these impact performance and extensibility.
6. Evaluate EHR systems based on vendor strategies for terminology management, knowledge management and data exchange.
7. Compare decision support capabilities and customizability, given different vendor EHRs.
8. Evaluate training and go-live strategies of different EHR vendors in terms of impact on cost, workflow, and patient safety.

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> • Describe the most common commercial electronic health record (EHR) systems used in ambulatory and inpatient care settings • List HIMSS resources available on EHR systems • Describe functions and applications of HIMSS resources available on EHR systems • Describe functions and applications of KLAS ratings available on EHR systems • Apply KLAS rating system to evaluate software selections for ambulatory and acute care EHRs.
Unit 2:	<ul style="list-style-type: none"> • Describe the Certification Commission for Health Information Technology (CCHIT) and its role in the certification of commercial EHRs • Describe or give examples illustrating how CCHIT criteria are used for certification of EHR systems • Identify the benefits of ‘meaningful use’ of EHRs and identify examples of ‘meaningful use’ of EHRs in given scenarios • Identify the three stages of implementation requirements for ‘meaningful use’ of EHRs

	<ul style="list-style-type: none"> Identify the role of governing bodies certifying commercial EHRs, including FDA oversight, the Joint Commission, and National Patient Safety Goals
Unit 3:	<ul style="list-style-type: none"> Demonstrate concept knowledge of the RFP process Identify the key stakeholders involved in EHR selection and the roles they each play Identify and give examples of the categories of project costs when selecting vendor-specific EHR systems Analyze the financial courses that strengthen an EHR vendor Identify the key steps in the selection process for choosing a vendor EHR
Unit 4:	<ul style="list-style-type: none"> Describe EHR functionality of Results Review Describe the EHR functionality of Computerized Provider Order Entry (CPOE) Describe the EHR functionality of Messaging among different vendor systems Describe the procedures for billing supported by EHR vendor systems
Unit 5:	<ul style="list-style-type: none"> Demonstrate concept knowledge of system and database architectures used in commercial EHRs Describe the health information systems landscape, including CPOE, Pharmacy, Lab, etc. Identify the different EHR hardware platforms Compare different EHR operating systems and databases Explain the importance of security, privacy, auditing and performance monitoring in EHRs
Unit 6:	<ul style="list-style-type: none"> Define interoperability Describe vendor strategies for terminology and knowledge management and how these impact interoperability Describe processes and requirements for exchanging data with personal health records
Unit 7:	<ul style="list-style-type: none"> Understand the importance of clinical decision support systems Describe decision support capabilities and customizability of different vendor EHRs
Unit 8:	<ul style="list-style-type: none"> Describe characteristics of training and go-live strategies that would facilitate implementation of a new Electronic Health Record (EHR) system Compare the advantages and disadvantages of a big-bang roll-out versus a phased roll-out and vice-versa Identify staffing, command center and on-site consultant considerations Compare strategies for monitoring system usage and change management

Most recent highlights and updates to this course include updates each semester taught to all Neehr Perfect assignments (4-different activities for each class) which simulate an electronic

health record and its functionalities, updates for privacy and security rulings as well as evaluation and selections of Electronic Health Record vendors.

HITT 2329 Installation and Maintenance of IT Systems – ONC Component 8

Course Description:

This course covers fundamentals of selection, installation and maintenance of typical Electronic Health Records (EHR) systems. Students will be introduced to the principles underlying system configuration including basic hardware and software components, principles of system selection, planning, testing, troubleshooting, and final deployment. System security and procedures will also be introduced in this component.

Component Objectives:

At the completion of this component, the student will be able to:

1. Articulate the elements of Health IT systems, including their advantages and disadvantages.
2. Justify criteria to be considered when recommending vendors and software
3. Design a comprehensive plan to install a health IT system
4. Design a comprehensive plan to maintain and troubleshoot a health IT system, incorporating system updates and user feedback
5. Implement project plans by installing and configuring hardware and software, interacting with vendors and users as needed
6. Verify plan implementation

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> • Describe the use of client and server hardware for access to and storage of EHRs • Describe network needs for access to and storage of EHRs • Identify the application software and back-end data storage software needed for a comprehensive, effective Health IT System
Unit 2:	<ul style="list-style-type: none"> • Compare and contrast COTS (Commercial Off-The-Shelf) and in-house/homegrown systems and describe their relative advantages and disadvantages. • Verify system compliance with ONC-ATCB certification • Identify purpose and categories of ARRA “Meaningful Use” criteria
Unit 3:	<ul style="list-style-type: none"> • Identify 12 possible steps to choosing an EHR system • Gather functional requirements from institution and users • Document use-cases and relate them to functional requirements
Unit 4:	<ul style="list-style-type: none"> • Identify the 8 basic components to a project plan • Define the role of a project manager • Equate the basic project plan components to a typical EHR implementation

	<p>plan</p> <ul style="list-style-type: none"> • Create a project plan for system design and implementation
Unit 5:	<ul style="list-style-type: none"> • Define the steps of the Software Development Life Cycle, or SDLC, and the purpose and importance of each • Describe different models of the SDLC and their key differences • Describe how and why an HIT software application would go through the SDLC
Unit 6:	<ul style="list-style-type: none"> • Identify regulatory requirements for EHRs • Provide training for system users regarding the methods and importance of security compliance • Identify administrative, physical, and technical safeguards for system security and regulatory compliance • Identify best practices for system security • Identify best practices for risk / contingency management
Unit 7:	<ul style="list-style-type: none"> • Determine and document system interfaces and integration requirements • Describe the pitfalls associated with installing a new application in an environment of pre-existing applications • Give examples of interfacing modalities
Unit 8:	<ul style="list-style-type: none"> • Identify and implement an effective troubleshooting procedure for reporting, evaluating, fixing, deploying, and follow-up of errors, problems, or limitations for the system • Integrate downtime schedule for OS, network, database, and client application maintenance and updates

Most recent highlights and updates to this course include updates each semester taught to all Neehr Perfect assignments (3-different activities for each class) which simulate an electronic health record and its functionalities as well as updates in privacy, security and confidentiality activities. In addition HIE nationwide updates.

HITT 2343 Quality Assessment and Performance Improvement – ONC Component 12

Course Description:

Study of the quality standards and methodologies in the health information management environment. Topics include licensing, accreditation, compilation and presentation of data in statistical formats, quality management and performance improvement functions, utilization management, risk management, and medical staff data quality issues. Approaches to assessing patient safety issues and implementation of quality management and reporting through electronic systems and approaches to assessing patient safety issues and implementation of quality management and reporting through electronic systems. No pre-requisites required.

Component Objectives:

At the completion of this component, the student will be able to:

1. Analyze clinical decision-making requirements, including who, what, when, how, and where information is needed.
2. Design and implement information technology that supports effective teamwork, fosters open communication and enables shared decision-making to achieve quality patient care
3. Analyze clinical workflows to design information technology that supports clinical decision-making and care coordination.
4. Design and apply of information technology and standardized practices that support safety and quality
5. Formulate activation planning that supports and maintains safety and quality
6. Select and apply quality measures for incorporation into information systems to enable review of outcomes of care and identification of improvement opportunities
7. Assess findings from quality reviews of reported events to design and implement clinical information system improvements.
8. Select improvement tools to assist clinical teams in improving the quality and safety of the electronic health record.
9. Monitor use of information technology for inappropriate use leading to hazards and errors
10. Design an information technology culture conducive to highly reliable processes built on human factors research.
11. Design and implement effective strategies to use information technology to decrease reliance on memory.

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> • Identify the current challenges in health care quality. • Examine the courses of the health care system that have an impact on quality. • Describe QI as a goal of meaningful use of HIT. • Analyze the ways that HIT can either help or hinder quality improvement. • Explain health care quality and quality improvement (QI). • Define utilization and resource management functions (WECM)
Unit 2:	<ul style="list-style-type: none"> • Investigate the fallibility of people and systems. • Describe the ways that every system is designed to achieve the results it gets. • Apply the basic principles of safe design. • Explain the ways that teams make wise decisions with diverse and independent input.
Unit 3:	<ul style="list-style-type: none"> • Discuss the basic concepts of reliability. • Understand what makes organizations highly reliable.
Unit 4:	<ul style="list-style-type: none"> • Discuss reliability as a tool for ensuring safety. • Examine how ultra-safe organizations operate.

	<ul style="list-style-type: none"> • Identify how teams make wise decisions.
Unit 5:	<ul style="list-style-type: none"> • Define decision support, its importance and why it is difficult to implement. • Compare decision support tools that help improve quality. • Analyze the benefits and shortfalls of alerts and clinical reminders.
Unit 6:	<ul style="list-style-type: none"> • Assess decision-making requirements in health or health care. • Construct a work process flow chart. • Appraise ways of incorporating decision-making requirements into HIT design.
Unit 7:	<ul style="list-style-type: none"> • Assess the impact of teamwork and communication on patient safety and care coordination. • Investigate ways in which HIT design can serve as a barrier to effective communication. • Describe ways in which HIT design can enhance communication and care coordination.
Unit 8:	<ul style="list-style-type: none"> • Apply QI tools to the analysis of HIT errors. • Identify strategies for adaptive work that can be useful to HIT initiatives. • identify potential risk management issues (WECM) • Use tools to perform quality assessment and improvement (WECM)
Unit 9:	<ul style="list-style-type: none"> • Critique an implementation team and the roles they play in ensuring quality • Analyze effective implementation planning • Assess the quality implications of “big bang” versus staggered approaches • Discuss “go live” support strategies that minimize risk
Unit 10:	<ul style="list-style-type: none"> • Understand the basic concepts of variation. • Explain the attributes of an effective reporting system. • Examine the importance of having standardized and structured health information so that you can use those data to make valid reports. • Discuss how HIT can facilitate data collection and reporting for improving quality of care and patient safety. • Assist in medical staff quality improvement functions (WECM)
Unit 11:	<ul style="list-style-type: none"> • Understand the different purposes of data. • Discuss the impact of poor data quality on quality measurement. • Identify ten attributes of data quality and key process recommendations. • Explore the attributes of data quality and key process recommendations for maintaining data integrity. • Discuss common causes of data insufficiency. • Describe how health information technology design can enhance data quality.
Unit 12:	<ul style="list-style-type: none"> • Explain how reporting errors can help to identify HIT system issues. • Describe ways in which HIT can facilitate error reporting and detection.

	<ul style="list-style-type: none">• Assess HIT for unintended negative consequences.• Examine common themes in HIT design deficiencies.• Apply QI tools to examine HIT errors.• Monitor compliance with governmental and organizational regulations and accreditation standards (WECM)• Apply policies and procedures to ensure the accuracy and integrity of health data both internal and external to the health system (AHIMA D III H.)
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Most recent highlights and updates to this course include the addition of the impact of meaningful use on quality, fallibility and the workplace, attributes of highly reliable organization, workplace safety, work processes and data collection, risk management and AHRQ.gov.

HITT 2351 Networking and Health Information Exchange – ONC Component 9

Course Description:

This continuing education or credit course is an In-depth analysis of data mobility including the hardware infrastructure (wires, wireless, and devices supporting them), the ISO stack, standards, Internet protocols, federations and grids, the NHIN and other nationwide approaches.

Component Objectives:

At the completion of this component, the student will be able to:

1. Explain the functions of all layers of the ISO OSI models, including how they are interconnected and supported.
2. Recommend components of networking hardware that meet standards and support information exchange.
3. Analyze standards associated with the EHR functional model, the PHR functional model, and the family of profiles associated with specific domain functional requirements
4. Explain the process and value of EHR certification.
5. Describe data standards required for the interoperable exchange of health care data, including terminology, data elements, document standards, imaging standards, and medical device standards.
6. Describe components of health IT standards (including HL7 and TC215) for health information exchange used by various stakeholders.
7. Examine additional standards related to shared and effective use of data, including clinical decision support.
8. Describe enterprise architecture models, including centralization vs federation and grids, service oriented architectures, and local implementations with respect to systems

from single units to organizations, regions (RHIOS and HIEs), states, and nationwide healthcare information systems (NHIN).

9. Incorporate professional and regulatory standards related to privacy, confidentiality, and security when implementing and maintaining networks and health information exchange systems, including NHIN.

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> • Explain the OSI representation of the various layers involved in networking, including the general functions of each layer and their interconnections • Explain the concept of the Application layer • Explain the concept of the Presentation layer • Explain the concept of the Session Layer • Explain the concept of the Transport layer • Explain the concept of the Network layer • Explain the concept of the Data Link layer • Explain the concept of the Physical layer • Explain connection-oriented versus connectionless communication • Explain the use of network addressing including security considerations and vulnerabilities
Unit 2:	<ul style="list-style-type: none"> • Select appropriate network media types (such as Ethernet and Wireless) to facilitate networking and data exchange, taking into account access and regulatory requirements • Select appropriate hardware devices (such as routers, switches, and access points) to facilitate networking and data exchange, taking into account access and regulatory requirements
Unit 3:	<ul style="list-style-type: none"> • Explain why standards related to networking and health information exchange are important, particularly in the current environment. • Component 9 Networking and Health Information Exchange 15 Version 1.0/Fall 2010 • Describe how standards are developed, who develops them, and how they are selected and accredited. • Explain the most common categories of standards (e.g., basic networking, application). • Demonstrate how to find, obtain, and use standards that are needed to facilitate networking and health information exchange.
Unit 4:	<ul style="list-style-type: none"> • Identify the set of standards necessary to establish semantic interoperability. • Describe the use, purpose and interrelation among sets of controlled vocabularies in use today (e.g., SNOMED – CT, ICD-9 and ICD 10, LOINC, RxNorm, nursing terminologies, UMLS). • Understand data elements; attributes of data elements, the relevant standard - ISO 11179, creation and purpose.

	<ul style="list-style-type: none"> • Explain how templates and archetypes facilitate networking and information exchange. • Discuss Clinical Data Architecture, Continuity of Care Record, Continuity of Care Document standards and describe the relationship among these standards.
Unit 5:	<ul style="list-style-type: none"> • Understand linking and aggregating data at all levels, • Understand how data may be interchanged among heterogeneous settings without loss of information, • Understand HL7 v2.x messaging communication standards, • Understand HL7 v3.0 messaging standards, and • Understand other data interchange standards including DICOM for imaging standards, NCPDP for prescriptions and medication reimbursement, IEEE for device interface standards, ASC X12N for claims and reimbursement standards, ASTM for document exchange, and IHE for profiles and registry standards. • Explain how model-based standards are created, • Define the methodology development framework, • Describe HL7 v3.0 messaging standards, • Imaging standards, • Standards for pharmacy services, • Interface standards for medical devices, • Claims and reimbursement standards, • Concept of profiling , and • Use and value of implementation guides
Unit 6:	<ul style="list-style-type: none"> • Understand the definition(s) of an Electronic Health Record • Understand architecture for an EHR • Identify and understand key standards for the EHR • Understand the HL7 EHR Functional Model Standards • Understand functional profiles • Understand the standards for Functional Models for the PHR • Understand the certification requirements for the EHR, PHR and functional profile
Unit 7:	<ul style="list-style-type: none"> • Understand the clinical decision support standard Arden Syntax, • Understand standards for clinical guidelines, • Understand object-oriented expression language for clinical decision support – GELLO, • Understand the clinical decision support standard Infobutton, • Understand disease management, and • Understand other clinical decision support applications. • Understand other standards that help to support networking and reporting requirements as well as functionality to optimize the connectivity among

	<p>heterogeneous systems deployed within a single enterprise,</p> <ul style="list-style-type: none"> • Understand single sign-on standards and the HL7 Clinical Context Object Workgroup (CCOW) standard, • Understand regulatory standards, and Understand issues relating to person identifiers, master patient indices, and record locator services
Unit 8:	<ul style="list-style-type: none"> • Explain regional healthcare networks – policy and implementation strategies • Explain the concept of a Nationwide Healthcare Information network • Explain the significance of Service Oriented Architecture in networking and health information exchange networks • Explain the value of an Enterprise Architecture in networking and health information exchange networks • Describe key elements of various service oriented architecture platforms and infrastructure options
Unit 9:	<ul style="list-style-type: none"> • Explain the concepts of privacy and confidentiality requirements and policies and learn how to implement the requirements • Describe how to secure data storage and transmission using data encryption, signatures, validation, non-repudiation, and integrity (PKI, certificates, and security protocols) • Define access control methods • Analyze access restrictions to data storage and retrieval (physical and software)
Unit 10:	<ul style="list-style-type: none"> • Understand the purpose and importance of a Health Information Exchange strategy, • Understand what an HIE is, • Understand the components of an HIE, and • Explore some examples of HIEs

Most recent highlights and updates to this course include Health Information Exchange (HIE), Texas Space, HL7 standards and clinical decision support systems, information governance, and standard on admission (SOA) guidelines.

HITT 2353 Workflow Process Analysis and Redesign – ONC Component 10

Course Description:

Fundamentals of health workflow process analysis and redesign as a necessary component of complete practice automation. Includes topics of process validation and change management.

Component Objectives:

At the completion of this component, the student will be able to:

1. Identify the elements involved in providing patient care within a complex health care setting that must be taken into consideration when examining and proposing changes in workflow processes.
2. Create a diagram of processes in the health care setting that support workflow analysis and re-design.
3. Critically analyze the workflow processes in a selected health care setting to determine their effectiveness from the perspective of those being served (i.e., patients), those providing the services (i.e., professional and non-professional staff), and the organization’s leadership (i.e., decision makers).
4. Propose ways in which quality improvement methods, tools and health IT can be applied within a health care setting to improve workflow processes.
5. Suggest approaches that would ensure the success of workflow re-design from development and presentation of the implementation plan, to facilitation of decision making meetings, implementation of the changes, evaluation of the new processes, sustainability of new workflow processes, and continuous quality improvement efforts to achieve meaningful use.
6. Apply to these activities an understanding of health IT, meaningful use, and the challenges practice settings will encounter in achieving meaningful use.

Course Objectives:	
Unit 1:	<ul style="list-style-type: none"> • Describe the purpose for process analysis and redesign in the clinical setting • Describe the role of a Practice workflow and information management redesign specialist and contrast it with other roles such as technical support and implementation management • Explain how health care process analysis and redesign and meaningful use are related • Analyze a health care scenario and identify the components of clinical workflow. • Given a scenario of a health care analysis and redesign, analyze the responsibilities of each participant in the process and how the roles complement or overlap with one another • Describe how the workflow processes used by a health care facility might differ depending on the type of facility • Outline elements within a complex healthcare system (WECM)
Unit 2:	<ul style="list-style-type: none"> • Articulate the value of process mapping. • Describe standard process mapping symbols and conventions. • Analyze an existing workflow process chart in terms of the information that could be generated, and the sequence of steps that are being communicated. • Choose the correct scope and detail level for a process map. • Choose an appropriate process mapping methodology.

	<ul style="list-style-type: none"> • Create a process map for a health care system (or system component) using correct symbols and conventions. • Develop a process map for given clinical process workflows. (WECM)
Unit 3:	<ul style="list-style-type: none"> • Create a process flowchart for a health care system (or system component) using appropriate ISO 5807 symbols and conventions, • Create context and data flow diagrams for a health care system (or system component) using appropriate Yourdon symbols and conventions, • Choose the correct scope and detail level for a process flowchart and data flow diagram, • Read and interpret Gane-Sarson data flow diagram, • Read and interpret an entity relationship diagram in crow's foot notation, and • Read and interpret UML class, activity, and state diagrams
Unit 4:	<ul style="list-style-type: none"> • Identify how the strategic goals and stakeholders for a given health care facility can influence workflow processes in that facility, • Create an agenda for an opening meeting to discuss workflow processes in a health care facility, in light of that facility's strategic goals and stakeholders, • Compare and contrast different types of knowledge and their impact on organizations, • Analyze a health care scenario according to CMMI levels, • Identify the workflow processes that are likely to be used by a health care facility, • Identify the workflow processes that are essential to observe in order to determine how best to streamline the operations in a given health care facility, and • Identify key individuals with whom the Practice Workflow and Information Management Redesign Specialist should meet or observe in order to gain an understanding of the nature and complexity of their work. • Given a process observation scenario, formulate the questions that would facilitate a productive discussion of the workflow of information, activities and roles within that facility, • Suggest ways to successfully respond to common challenges encountered in knowledge acquisition, • Given a practice scenario, choose an appropriate knowledge acquisition method, • Given a process analysis scenario including list of observations, create agenda for visit closing meeting and an initial meeting report, and • Given a set of diagrams and observations from an information gathering meeting, draft a summary report
Unit 5:	<ul style="list-style-type: none"> • Describe the purpose of process analysis,

	<ul style="list-style-type: none"> • Describe skills and knowledge necessary for process analysis, • Perform a process analysis for a given clinic scenario, • Given results of a process analysis draft a summary report, and • Given results of a process analysis, identify desired EMR functionality • Analyze the workflow processes (WECM)
Unit 6:	<ul style="list-style-type: none"> • Identify the factors that optimize workflow processes in health care settings. • Describe how information technology can be used to increase the efficiency of workflow in health care settings. • Identify aspects of clinical workflow that are improved by EHR. • Propose ways in which the workflow processes in health care settings can be re-designed to ensure patient safety and increase efficiency in such settings. • Use knowledge of common software functionality and meaningful use objectives to inform a process redesign for a given clinic scenario • Document clinical processes to facilitate workflow analysis and redesign (WECM) • Develop a workflow plan that integrates meaningful use criteria (WECM)
Unit 7:	<ul style="list-style-type: none"> • Describe major health care facility decisions in process redesign that includes EHR technology • Draft an agenda and facilitation plan for a decision making meeting, • Prepare a presentation to communicate findings of a workflow analysis or process redesign to health care facility decision makers, • Document those decisions that are made and actions identified in a decision making meeting, and • Critique a decision making meeting agenda, facilitation plan or scenario to identify problems and how they could have been prevented
Unit 8:	<ul style="list-style-type: none"> • Describe strategies for quality improvement • Describe the role of Leadership in Quality Improvement • Describe the local clinic improvement capabilities • Describe and recommend tools for quality improvement • Compare and contrast the quality improvement methodologies and tools and their appropriate uses in the health care setting • Design processes to improve quality reporting. (WECM) • Demonstrate decision-making necessary for optimizing healthcare processes. (WECM)
Unit 9:	<ul style="list-style-type: none"> • Explain concerns expressed by participants in a process analysis & redesign scenario in terms of common change management concepts. • Propose strategies to gain acceptance of changes in work processes. • Create and critique a facilitation plan, including appropriate facilitation tools for a given process analysis & redesign scenario, and

	<ul style="list-style-type: none"> Given a health care change management scenario, explain outcomes in terms of common change management concepts
Unit 10:	<ul style="list-style-type: none"> Develop a Process Change Implementation Plan for a health care facility that includes tasks to be accomplished, responsible parties for various tasks, a timeline, and the human and material resources needed Identify management tracking and measurement opportunities for the process change Outline elements of an evaluation plan that will help determine the success of a workflow process change implemented in a health care facility Describe how the workflow analyst can help a health care facility continually improve its workflow processes, based on results of ongoing evaluations
Unit 11:	<ul style="list-style-type: none"> Design control strategies to maintain performance of clinic processes Develop and present a sustainability and continuous improvement plan for a health care setting Work with practice staff to develop a set of plans to keep the practice running (to the extent necessary and practical) if the EHR system fails Work with practice staff to evaluate the new processes as implemented and identify problems and changes that are needed Develop a contingency plan for EHR system failure. (WECM)

Most recent highlights and updates to this course include rework or process mapping and efficiency, paper to paperless workflow redesign, managing construction and IT projects and contingency work plans.