Western Technical College

10530164 Intro to Health Informatics

Course Outcome Summary

Course Information

Description	Emphasizes the role of information technology in healthcare through an investigation of the electronic health record (EHR), business, and health information software applications. Learners will develop skills to assist in enterprise information management and database architecture design and implementation.
Career Cluster	Health Science
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	72

Textbooks

Introduction to Information Systems for Health Information Technology. 4th Edition. Copyright 2021. Sayles, Nanette B. and Lauralyn Kavanaugh-Burke. Publisher: American Health Information Management Association. **ISBN-13**: 978-1-58426-742-3. Required.

Health Information Management Technology: An Applied Approach with Student Member Package - Bundled with AHIMA/WHIMA Membership. 6th Edition. Copyright 2020. Sayles, Nanette B. Publisher: American Health Information Management Association. **ISBN-13**: 978-1-58426-774-4. Required.

Learner Supplies

Internet and E-mail access, Microsoft Office (Word, PowerPoint, Access, Excel). Free access with Western student email address from https://login.microsoftonline.com/. **Vendor:** To be discussed in class. Required.

American Health Information Management Association Virtual Lab Subscription. Vendor: Campus Shop. Required.

Success Abilities

1.   Cultivate Passion: Increase Self-Awareness

2.   Live Responsibly: Develop Resilience

3.   Live Responsibly: Embrace Sustainability

4.   Live Responsibly: Foster Accountability

5.   Refine Professionalism: Act Ethically

6.   Refine Professionalism: Improve Critical Thinking

7.   Refine Professionalism: Practice Effective Communication

Program Outcomes

1.   HIT - Apply data governance principles to ensure the quality of health data

2.   HIT - Model professional behaviors and ethics

3.   HIT - Apply informatics and analytics in data use

4.   HIT - Apply organizational management techniques

Course Competencies

1.   EXAMINE the architecture, design and interconnection of healthcare databases within an organization

Assessment Strategies
1.1.   Oral, written or graphic assessment

Criteria
1.1.   you examine or create a data dictionary
1.2.   you examine network designs
1.3.   you examine system interfaces
1.4.   you examine system integration
1.5.   you evaluate data dictionaries and data sets for compliance with governance standards
1.6.   you describe the use of metadata

Learning Objectives
1.a.   Describe the interrelationship of electronic health records, health information exchange and data analytics in health informatics
1.b.   Summarize the evolution of health informatics
1.c.   Explain the differences between internet, intranet and extranet
1.d.   Summarize the impact of computers on health care
1.e.   Justify use of electronic health records from a patient safety standpoint
1.f.   Identify the input/output, storage, processing, network and other hardware associated with health IT systems
1.g.   Identify the types of software that support health IT systems
1.h.   Explain how networks communicate
1.i.   Explain the purpose of a firewall
1.j.   Summarize network types, architecture, and topology
1.k.   Explain the differences between integrated and interfaced systems
1.l.   Describe metadata and how it supports interoperability and health information exchange
1.m.   Build a data dictionary for a healthcare database (determine field type, definition and size for a data element).
1.n.   Create relationships between tables in a database
1.o.   Construct an electronic form/subform to collect structured and unstructured data in a database
1.p.   Build a query to retrieve data from a database
1.q.   Construct a report based on queried data
1.r.   Illustrate the relationships among data elements using data modeling techniques
1.s.   Describe how data is stored in a database (data repository, data warehouse, data mart)
1.t.   Describe the use of data mining in strategic decision making

2.   MANAGE data within a database system

Assessment Strategies
2.1.   Oral, written or graphic assessment

Criteria

2.1. you create a query
2.2. your query selects the data required to respond to the requested information
2.3. your report is professional designed and presented
2.4. you use analytic software to generate data visualizations
2.5. you analyze the integrity of the data

Learning Objectives

2.a. Identify information systems needed to support efficient operations in the HIM department
2.b. Examine the use of metadata in e-discovery and what it can reveal about data integrity
2.c. Summarize the functions of the various health information systems
2.d. Use software applications to perform HIM functions (eg. ROI, chart tracking, deficiency analysis, etc.)
2.e. Identify administrative information systems that support a healthcare organization's business functions
2.f. Identify administrative systems that impact health information management practices
2.g. Summarize the functions of the various administrative systems
2.h. Manage the electronic master patient index (eg. collect and retrieve patient demographic info, identify and correct duplicates)
2.i. Identify clinical information systems that facilitate patient care and help create the health record
2.j. Summarize the functions of the various clinical information systems
2.k. Summarize the functions of the clinical workstation
2.l. Use electronic document management systems to retrieve patient health information
2.m. Demonstrate the role of the provider in clinical information system documentation
2.n. Explain the differences between electronic health records and electronic medical records
2.o. Identify source systems that capture and feed data into the electronic health record
2.p. Summarize the components of an electronic health record – source systems, core clinical systems, supporting infrastructure and connectivity systems
2.q. Explain the purpose and content of the continuity of care record
2.r. Examine the background, requirements and challenges in implementation of legislation related to health information technology (HITECH, meaningful use, certified EHR technology, etc.).
2.s. Summarize benefits and challenges of electronic health records
2.t. Use a query to retrieve requested information from the electronic health record
2.u. Apply error correction and prevention features of electronic health record software
2.v. Examine the role of the provider in the documentation and use of electronic health information
2.w. Examine the role of the health information professional in maintaining electronic health information
2.x. Explain how business intelligence is used in healthcare
2.y. Use business intelligence software to mine data, analyze data and create data visualizations

3. **EXAMINE transaction and exchange regulations and standards for the sharing and exchange of electronic health information**

Assessment Strategies

3.1. Oral, written or graphic assessment

Criteria

3.1. you examine the policy
3.2. you compare transaction standards
3.3. you describe data marts, data warehouses and health information exchanges
3.4. you compare the policy against the legislation and standards for compliance
3.5. you make recommendations for what must be changed
3.6. you explain advantages of sharing and exchange of electronic health information
3.7. you explain concepts of interoperability

Learning Objectives

3.a. Explain the concept of interoperability and its importance in health information exchange
3.b. Compare the benefits and barriers of health information exchange from the standpoint of patient, provider, society and health care organization
3.c. Describe models and methods of health information exchange
3.d. Describe the role and function of the health information organization (HIO) in health information exchange
3.e. Identify the regional health information organization (RHIO) which includes Wisconsin
3.f. Summarize the challenges surrounding patient identity matching and health information exchange

3.g. Identify legislation legislative requirements surrounding health information exchange
3.h. Assess compliance with transaction and exchange standards and make recommendations for improvement

4. APPLY information system policies and procedures to protect the accuracy and integrity of health data for internal and external use and exchange

Assessment Strategies
4.1. Oral, written or graphic assessment

Criteria
4.1. you analyze data integrity
4.2. you analyze security monitoring policies

Learning Objectives
4.a. Describe data sources that populate the electronic health record
4.b. Summarize methods of data capture in health information systems
4.c. Demonstrate how data quality and integrity is affected by methods of data capture
4.d. Identify appropriate field type for a data element
4.e. Describe activities that improve data quality and integrity
4.f. Compare information governance (IG) and data governance (DG)
4.g. Explain the importance of enterprise information management (EIM) and why it has become essential
4.h. Explain the reasons why health information has become a valued strategic asset.
4.i. Summarize the key principles of Information Governance Principles for Healthcare (IGPHC).
4.j. Identify tools that can be used to assist a healthcare organization in implementing an IG program.

5. PARTICIPATE in the selection and implementation of health information systems

Assessment Strategies
5.1. Oral, written or graphic assessment

Criteria
5.1. you use a systematic approach
5.2. you distinguish between team roles
5.3. you compare systems against criteria
5.4. you address organizational needs
5.5. you develop project implementation plan
5.6. you create a test plan for system implementation
5.7. you include appropriate staff in the project plan
5.8. you examine system selection and implementation methodologies
5.9. you apply system testing strategies
5.10. you explore the importance of system integration

Learning Objectives
5.a. Summarize the steps in the system development life cycle (SDLC)
5.b. Summarize the elements of a needs assessment.
5.c. Explain the relationship between strategic planning and project management.
5.d. Describe components of a feasibility study in planning for system selection
5.e. Describe what is included in a budget when planning for system selection
5.f. Summarize reasons for setting goals and determining project scope when planning for system selection
5.g. Describe the structures put in place in the organizing phase of system selection
5.h. Summarize team roles in systems design, development and implementation
5.i. Describe tools of project management (PERT, Gantt)
5.j. Identify system functional requirements
5.k. Evaluate internal and external environmental factors that will impact a project
5.l. Summarize components and dimensions of system design
5.m. Explain the differences between integrated and interfaced system design
5.n. Describe characteristics of the physical design components of a system
5.o. Identify the elements in a request for proposal
5.p. Evaluate vendor proposals against criteria to determine the most appropriate selection
5.q. Identify components of a project implementation plan
5.r. Differentiate system testing methods
5.s. Conduct testing to identify and correct problems in preparation for implementation of an EHR system

5.t. Demonstrate conversion of data being transferred from existing system
5.u. Develop system training materials for end users
5.v. Summarize go live approaches to system implementation
5.w. Describe oversight activities that are a part of ongoing maintenance and evaluation following system implementation

6. ASSESS information systems for compliance with health information technology regulations and standards

Assessment Strategies
6.1. Oral, written or graphic assessment

Criteria
6.1. you verify system meets minimum requirements for certification of health information technology
6.2. you summarize findings of system analysis within a report
6.3. you analyze system security policy and procedures.

Learning Objectives
6.a. Summarize the role of Standards Development Organizations in the development of standards for health information technology
6.b. Examine technical safeguards for protecting and controlling access to health information
6.c. Compare the purposes of standards for data content, vocabulary, messaging, privacy and security
6.d. Justify the level of system access based on the roles and responsibilities within the organization
6.e. Identify standards development organizations for data content, vocabulary and messaging standards
6.f. Describe technologies to authenticate user access to protected health information
6.g. Identify the legislation behind the development of privacy and security standards
6.h. Conduct an audit to determine the occurrence of security violations
6.i. Summarize the differences between continuity of care record and continuity of care document
6.j. Identify the various threats to data integrity
6.k. Illustrate how mapping facilitates interoperability between terminologies
6.l. Identify methods to securely transmit data
6.m. Summarize legislation related to security of health information
6.n. Examine physical safeguards for the protection of electronic systems, buildings and equipment from natural and environmental hazards and unauthorized intrusion
6.o. Differentiate privacy, confidentiality and security
6.p. Compare the HIPAA Privacy Rule and Security Rule
6.q. Identify the data elements that are considered protected health information (PHI)
6.r. Summarize patient rights under the Privacy Rule
6.s. Explain the use of the Notice of Privacy Practices
6.t. Differentiate data security and system security
6.u. Ascertain threats to data and system security and recommend appropriate security measures
6.v. Examine the impact of computer system security violations
6.w. Analyze policies and procedures for privacy and security practices
6.x. Identify standards that protect data and system security
6.y. Examine components of administrative provisions to protect security
6.z. Describe elements of a risk management plan and security program as means of documenting security management practices
6.aa. Describe the role of the Privacy/Security Officer
6.bb. Examine HIM privacy and security certifications
6.cc. Describe methods of dealing with workforce security issues
6.dd. Develop training materials for staff on security issues
6.ee. Determine proper steps to be taken when a security incident occurs
6.ff. Examine contingency plans for the presence of required implementation procedures (data back-up, disaster recovery, emergency mode operation plan, testing and revision procedures, application and data criticality analysis).
6.gg. Examine security risk assessment tools and techniques to analyze vulnerability and minimize risk

7. APPLY retention, destruction, archival and recovery policies for electronic health information/data

Assessment Strategies
7.1. Oral, written or graphic assessment

Criteria

7.1.   you analyze compliance with state and federal laws, regulations and accreditation standards
7.2.   you ensure policy addresses facility needs
7.3.   you consider electronic health information destruction options
7.4.   you ensure policy includes disaster recovery plan

Learning Objectives

7.a.   Determine compliance of electronic data retention and recovery policies with state and federal laws and accrediting body standards
7.b.   Describe the relationship of data redundancy to data security
7.c.   Examine media storage methods to preserve data integrity
7.d.   Investigate media destruction methods to ensure privacy and security of patient data

8.   **EXAMINE current trends and future challenges of consumer health informatics**

Assessment Strategies

8.1.   Oral, written or graphic assessment

Criteria

8.1.   you explain current and emerging trends in mobile technology
8.2.   you explain how technology addresses patient safety
8.3.   you explain usability and accessibility of health information by patients

Learning Objectives

8.a.   Examine current and emerging trends in consumer health informatics
8.b.   Examine the impact of the patient's e-health literacy on health care outcomes
8.c.   Evaluate the importance of consumer engagement in the patient's own health care
8.d.   Examine the benefits and challenges of telehealth
8.e.   Analyze barriers to the use of patient portals and patient/provider email for the patient and provider
8.f.   Advocate for the use of personal health records