



## **Course Syllabus**

### **HITT 1211 – Health Information Systems**

**Catalog Description:** Introduction to health IT standards, health-related data structures, software applications, and enterprise architecture in health care and public health.

**Prerequisites:** none

**Semester Credit Hours:** 2

**Lecture Hours per Week:** 1

**Lab Hours per Week:** 3

**Contact Hours per Semester:** 80

**State Approval Code:** 51.0700

**Instructional Goals and Purposes:** The purpose of this course is to introduce the student to the principles of computer technology related to health care with emphasis on computerized medical billing, health care data collection, storage, retrieval, security arrangement, presentation, and verification. This course will also introduce the components and requirements of the electronic health record.

#### **Learning Outcomes:**

1. Describe general functions, purposes and benefits of health information systems.
2. Describe the evolution and adoption of health information systems
3. Compare health information systems in terms of their ability to support the requirements of a health care enterprise.
4. Explain the impact of electronic health records on reporting outcomes
5. Explain strategies to minimize major barriers to the adoption of electronic health records.
6. Explain the principles of health care data exchange and standards.
7. Review workflow design and assessment, and their relationship to patient care, productivity and data analysis.
8. Propose the hardware, software, operating system and networking considerations necessary for effective data storage and use in health care organizations.
9. Utilize the tools and techniques for collecting, storing, securing, retrieving, and reporting health care data.

**Specific Course Objectives (includes SCANS):** After studying the material presented in the texts, lecture, laboratory, and other resources, the student should be able to complete all behavioral/learning objectives listed below with a minimum competency of 70%.

#### **1. Apply Computerized Billing**

- a. Describe the functions of a patient billing system in a medical office
- b. Enter patient and case information into the computer using Neehr Perfect software
- c. Process patient encounter transactions for a medical office
- d. Produce reports and patients statements for a medical office
- e. Process claims to third party payers for a medical office

- f. Enter and change appointments for a medical office
- g. Perform a patient billing simulation for a medical office

**SCANS Basic Skill Competencies: Ai, Aii, Aiv, Bii, Biii, Biv, Bv, Ci, Cii, Civ, Cv**

**SCANS Workplace Competencies: Ai, Aii, Aii, Aiv, Biii, Bvi, Ci, Cii, Cii, Civ, Di, Dii, Diii, Ei, Eii, Eiii**

## **2. Describe Fundamentals of Information Systems**

- 1. Identify the three major components of information technology
- 2. Describe the major types of information systems
- 3. Describe the steps in the information systems development life cycle
- 4. Explain the major types of databases

**SCANS Basic Skill Competencies: Ai, Aii, Aiv, Bii, Biii, Biv, Bv, Ci, Cii, Civ, Cv**

**SCANS Workplace Competencies: Ai, Aii, Aii, Aiv, Biii, Bvi, Ci, Cii, Cii, Civ, Di, Dii, Diii, Ei, Eii, Eiii**

## **3. Explain Healthcare Information Systems**

- a. Describe the evolution of information systems in health care
- b. Describe the major types of information system applications used in healthcare organizations
- c. Identify the steps in the systems development process.
- d. Identify the key roles in the management of healthcare information systems

**SCANS Basic Skill Competencies: Ai, Aii, Aiv, Bii, Biii, Biv, Bv, Ci, Cii, Civ, Cv**

**SCANS Workplace Competencies: Ai, Aii, Aii, Aiv, Biii, Bvi, Ci, Cii, Cii, Civ, Di, Dii, Diii, Ei, Eii, Eiii**

## **4. Explain Electronic Health Records**

- a. Define electronic health records
- b. Describe the criteria for the Electronic Health Record (EHR)
- c. List the technical system components of the EHR
- d. Identify and define terms associated with EHRs
- e. Discuss the current status of EHR development and implementation
- f. Discuss the legal issues surrounding the adoption of EHR
- g. Describe the different methods of capturing and recording data
- h. Describe levels of electronic health record implementations
- i. List anticipated EHR benefits
- j. Compare EHRs in an inpatient versus outpatient setting
- k. Identify the uses and users of an EHR system
- l. Differentiate between a data repository and a data warehouse and how they support an EHR
- m. Identify the primary processing, storage, input/output, network and other hardware associated with EHR system
- n. Identify the types of software that support EHR systems
- o. Describe workflow of physician orders and results
- p. Differentiate among the prominent billing code sets such as CPT-4, ABC, ICD-10-CM/PCS
- q. Define the National Health Information Infrastructure

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**SCANS Workplace Competencies: Ai, Aii, Aii, Aiv, Biii, Bvi, Ci, Cii, Cii, Civ, Di, Dii, Diii, Ei, Eii, Eiii**

## **5. Enter Data into Electronic Health Record**

- a. Enter outpatient data into Neehr Perfect EHR system by using drop-down menus, free text, and Forms
- b. Print encounter notes
- c. Order diagnostic tests and write prescriptions using Neehr Perfect
- d. Calculate E&M codes using Neehr Perfect
- e. Assign ICD-10-CM/PCS codes using Neehr Perfect

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**SCANS Workplace Competencies: Ai, Aii, Aii, Aiv, Biii, Bvi, Ci, Cii, Cii, Civ, Di, Dii, Diii, Ei, Eii, Eiii**

## **6. Maintain Information Security**

- a. Describe the elements of a data security program
- b. Describe the four primary components of the security provisions of the Health Insurance Portability and Accountability Act
- c. Discuss the roles and responsibilities of health information technicians with regard to data security

**SCANS Basic Skill Competencies: Ai, Aii, Aiv, Bii, Biii, Biv, Bv, Ci, Cii, Civ, Cv**

**SCANS Workplace Competencies: Ai, Aii, Aii, Aiv, Biii, Bvi, Ci, Cii, Cii, Civ, Di, Dii, Diii, Ei, Eii, Eiii**

## **7. Use Health Information Management Software**

- a. Enter patient and case data into computer using the Administrative Module of Neehr Perfect.
- b. Enter medical record data into the computer using the Chart Completion Module of Neehr Perfect
- c. Enter medical record data into the computer using the Chart Locator Module of Neehr Perfect
- d. Enter medical record and third party data into the computer using the Correspondence Module of Neehr Perfect
- e. Print Medical Record Deficiency Reports using Chart Completion Module of Neehr Perfect

**SCANS Basic Skill Competencies: Ai, Aii, Aiv, Bii, Biii, Biv, Bv, Ci, Cii, Civ, Cv**

**SCANS Workplace Competencies: Ai, Aii, Aii, Aiv, Biii, Bvi, Ci, Cii, Cii, Civ, Di, Dii, Diii, Ei, Eii, Eiii**

### **Course Content:**

A general description of lecture/discussion topics included in this course are listed in the Learning Objectives / Specific Course Objectives sections of this syllabus.

Students in all sections of this course will be required to do the following:

1. Neehr Perfect EHR exercises
2. Quizzes over lecture materials
3. 2 Major exams
4. Final Exam

**Methods of Instruction/Course Format/Delivery:** Written and/or computer-delivered examinations including recognition and recall as well as analysis and discrimination; professionalism, attendance.

Students will be required to complete a tutorial and a comprehensive simulation using Neehr Perfect. Students will be expected to use the program to correctly enter patient information, input patient transactions, create insurance claims, produce patient statements, enter payments and adjustments and produce reports.

Professionalism and attendance will include participation in several discussion questions throughout the semester.

Student comprehension of textbook information will be evaluated by chapter exams which will be short answer, fill-in-the-blank, multiple choice and listing.

### **Major Assignments / Assessments:**

The following items will be assigned and assessed during the semester and used to calculate the student's final grade.

#### **Assignments**

1. Neehr Perfect EHR exercises
2. Quizzes over lecture materials

#### **Assessment(s):**

1. 2 Major Exams
2. Final Exam (comprehensive)

### **Course Grade:**

The grading scale for this course is as follows:

- Neehr Perfect – 40%
- Major exams – 20%
- Professionalism, class participation- 10%
- Attendance – 10%
- Final exam – 20%

### **Texts, Materials, and Supplies:**

- Access code for Neehr Perfect

### **Required Readings:**

- Additional readings from instructor

### **Recommended Readings:**

- none

### **Other:**

- For current texts and materials, use the following link to access bookstore listings: <http://www.panolacollegestore.com>
- For testing services, use the following link: <http://www.panola.edu/elearning/testing.html>
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Administration Building or go to <http://www.panola.edu/student-success/disability-support-services/> for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder*: <http://www.panola.edu/student-success/documents/pathfinder.pdf>

## SCANS CRITERIA

- 1) **Foundation skills are defined in three areas: basic skills, thinking skills, and personal qualities.**
  - a) **Basic Skills:** A worker must read, write, perform arithmetic and mathematical operations, listen, and speak effectively. These skills include:
    - i) Reading: locate, understand, and interpret written information in prose and in documents such as manuals, graphs, and schedules.
    - ii) Writing: communicate thoughts, ideas, information, and messages in writing, and create documents such as letters, directions, manuals, reports, graphs, and flow charts.
    - iii) Arithmetic and Mathematical Operations: perform basic computations and approach practical problems by choosing appropriately from a variety of mathematical techniques.
    - iv) Listening: receive, attend to, interpret, and respond to verbal messages and other cues.
    - v) Speaking: Organize ideas and communicate orally.
  - b) **Thinking Skills:** A worker must think creatively, make decisions, solve problems, visualize, know how to learn, and reason effectively. These skills include:
    - i) Creative Thinking: generate new ideas.
    - ii) Decision Making: specify goals and constraints, generate alternatives, consider risks, and evaluate and choose the best alternative.
    - iii) Problem Solving: recognize problems and devise and implement plan of action.
    - iv) Visualize ("Seeing Things in the Mind's Eye"): organize and process symbols, pictures, graphs, objects, and other information.
    - v) Knowing How to Learn: use efficient learning techniques to acquire and apply new knowledge and skills.
    - vi) Reasoning: discover a rule or principle underlying the relationship between two or more objects and apply it when solving a problem.
  - c) **Personal Qualities:** A worker must display responsibility, self-esteem, sociability, self-management, integrity, and honesty.
    - i) Responsibility: exert a high level of effort and persevere toward goal attainment.
    - ii) Self-Esteem: believe in one's own self-worth and maintain a positive view of oneself.
    - iii) Sociability: demonstrate understanding, friendliness, adaptability, empathy, and politeness in group settings.
    - iv) Self-Management: assess oneself accurately, set personal goals, monitor progress, and exhibit self-control.
    - v) Integrity and Honesty: choose ethical courses of action.
- 2) **Workplace competencies are defined in five areas: resources, interpersonal skills, information, systems, and technology.**
  - a) **Resources:** A worker must identify, organize, plan, and allocate resources effectively.
    - i) Time: select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
    - ii) Money: Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
    - iii) Material and Facilities: Acquire, store, allocate, and use materials or space efficiently. Examples: construct a decision time line chart; use computer software to plan a project; prepare a budget; conduct a cost/benefits analysis; design an RFP process; write a job description; develop a staffing plan.
  - b) **Interpersonal Skills:** A worker must work with others effectively.
    - i) Participate as a Member of a Team: contribute to group effort.
    - ii) Teach Others New Skills.
    - iii) Serve Clients/Customers: work to satisfy customer's expectations.

- iv) **Exercise Leadership:** communicate ideas to justify position, persuade and convince others, responsibly challenge existing procedures and policies.
- v) **Negotiate:** work toward agreements involving exchange of resources, resolve divergent interests.
- vi) **Work with Diversity:** work well with men and women from diverse backgrounds.

Examples: collaborate with a group member to solve a problem; work through a group conflict situation, train a colleague; deal with a dissatisfied customer in person; select and use appropriate leadership styles; use effective delegation techniques; conduct an individual or team negotiation; demonstrate an understanding of how people from different cultural backgrounds might behave in various situations.

c) **Information:** A worker must be able to acquire and use information.

- i) **Acquire and Evaluate Information.**
- ii) **Organize and Maintain Information.**
- iii) **Interpret and Communicate Information.**
- iv) **Use Computers to Process Information.**

Examples: research and collect data from various sources; develop a form to collect data; develop an inventory record-keeping system; produce a report using graphics; make an oral presentation using various media; use on-line computer data bases to research a report; use a computer spreadsheet to develop a budget.

d) **Systems:** A worker must understand complex interrelationships.

- i) **Understand Systems:** know how social, organizational, and technological systems work and operate effectively with them.
- ii) **Monitor and Correct Performance:** distinguish trends, predict impacts on system operations, diagnose deviations in systems' performance and correct malfunctions.
- iii) **Improve or Design Systems:** suggest modifications to existing systems and develop new or alternative systems to improve performance.

Examples: draw and interpret an organizational chart; develop a monitoring process; choose a situation needing improvement, break it down, examine it, propose an improvement, and implement it.

e) **Technology:** A worker must be able to work with a variety of technologies.

- i) **Select Technology:** choose procedures, tools or equipment including computers and related technologies.
- ii) **Apply Technologies to Task:** understand overall intent and proper procedures for setup and operation of equipment.
- iii) **Maintain and Troubleshoot Equipment:** Prevent, identify, or solve problems with equipment, including computers and other technologies.

Examples: read equipment descriptions and technical specifications to select equipment to meet needs; set up and assemble appropriate equipment from instructions; read and follow directions for troubleshooting and repairing equipment.