Principles of Health Informatics

PEIMS Code: N1302108
Abbreviation: HLTHINF
Grade Level(s): 9-12
Award of Credit: 1.0

Approved Innovative Course

- Districts must have local board approval to implement innovative courses.

- In accordance with Texas Administrative Code (TAC) §74.27, school districts must provide instruction in all essential knowledge and skills identified in this innovative course.

- Innovative courses may only satisfy elective credit toward graduation requirements.

- Please refer to TAC §74.13 for guidance on endorsements.

Course Description:

The *Principles of Health Informatics* course introduces students to of one of the fastest growing areas in academia and industry professions. A large gap exists between state-of-the-art computer technologies and the state of affairs in health care information technology. The result is an increased demand for information and health professionals who can effectively design, develop, and use technologies such as electronic medical records, patient monitoring systems, and digital libraries, while managing the vast amount of data generated by these systems.

Essential Knowledge and Skills:

(a)   General Requirements. This course is recommended for students in Grades 9-12.

(b)   Introduction.

(1)   Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2)   The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3)   The Principles of Health Informatics course introduces students to of one of the fastest growing areas in academia and industry professions. A large gap exists between state-of-the-art computer technologies and the state of affairs in health care information technology. The result is an increased demand for information and health professionals who can effectively design, develop, and use technologies such as electronic medical records, patient monitoring systems, and digital libraries, while managing the vast amount of data generated by these systems.

(4) To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) Professional integrity in the health science industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(c) Knowledge and Skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) define the steps in assessing and responding quickly to customer needs to meet expectations and achieve customer satisfaction;

(B) consider options, rewards, and risks as well as strengths and weaknesses of arguments;

(C) discuss judging alternatives, setting limits, and relying on forethought and rationale in making well-informed decisions;

(D) follow written and oral instructions;

(E) effectively understand, interact, empathize, and work well with a variety of people inside and outside of the organization at different levels and across disparate cultures;

(F) listen and verbally express ideas and messages to others in a clear, concise, and effective manner;

(G) define maintaining professionalism such as dressing appropriately, speaking politely, and adhering to ethical and professional standards; and

(H) identify the skills necessary to assess interpersonal situations and resolve or mediate conflicts.

(2) The student recognizes the terminology related to the health science industry. The student is expected to:

(A) identify abbreviations, acronyms, and symbols related to the health science industry;

(B) identify the basic structure of medical words;

(C) practice word-building skills;

(D) research the origins of eponyms;

(E) recall directional terms and anatomical planes related to body structure;

(F)   define and accurately spell occupationally specific terms such as those relating to the body systems, surgical and diagnostic procedures, diseases, and treatment; and

(G)   use prior knowledge and experiences to understand the meaning of terms as they relate to the health science industry.

(3)   The student demonstrates communication skills using the terminology applicable to the health science industry. The student is expected to:

(A)   demonstrate appropriate verbal and written strategies such as correct pronunciation of medical terms and spelling in a variety of health science scenarios;

(B)   employ increasingly precise language to communicate; and

(C)   translate technical material related to the health science industry.

(4)   The student demonstrates fundamental knowledge of health information systems technology and the tools for collecting, storing, and retrieving health care data. The student is expected to:

(A)   identify the fundamental computer skills required to maintain patient health records;

(B)   define monitoring processes used to safeguard patient information;

(C)   classify information according to content and purpose;

(D)   describe the steps necessary to develop a records management system;

(E)   identify the steps necessary to prevent loss of information;

(F)   verify accuracy of patient information;

(G)   index information resources; and

(H)   define database design and management.

(5)   The student investigates the various types of databases in relation to health informatics. The student is expected to:

(A)   define the function of a database management system;

(B)   identify the purpose of data modeling;

(C)   list the steps to requesting reports or records;

(D)   describe how to reconcile data discrepancies with medical personnel;

(E)   define the customary steps in the data modeling process;

(F)   differentiate between entities, attributes, and relationships in a data model; and

(G)   explain various types of organizational databases.

(6)   The student demonstrates knowledge of code data and patient information. The student is expected to:

(A)   differentiate between code data and patient information;

(B)   assign codes to healthcare or insurance records and paperwork;

(C)   list the steps to compiling data;

(D)   list the steps to completing medical documentation; and

(E)   compare the data collection process between patients and other medical professionals.

(7)   The student examines the evolution of the health information system. The student is expected to:

(A)   evaluate the growing role of the electronic health record;

(B)   identify occupations in the health information career field;

(C)   research the progress of the development of the electronic health record; and

(D)   explain functional requirements for electronic health records.

(8)   The student examines the process of medical diagnostic and coding concepts and current procedural practices. The student is expected to:

(A)   define Health Insurance Portability and Accountability Act (HIPAA) guidelines for confidentiality, privacy, and security of a patient's information when sharing with a covered entity such as clearinghouse, insurance company;

(B)   identify forms related to coding and billing such as Superbills, CMS-1500 claim forms, UB-04 hospital claim forms;

(C)   differentiate between insurance fraud and insurance abuse;

(D)   input the correct diagnosis code using the International Classification of International Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) code system;

(E)   identify the two types of codes in the health care common procedure coding system (HCPCS);

(F)   discuss the relationship between current procedural technology (CPT) codes, ICD-10-CM, and medical necessity for reimbursement for charges billed;

(G)   advise patients on hospital or healthcare system rules, processes, and procedures; and

(H)   describe how medical coding affects the payment process.

(9)   The student identifies government health agencies and the process in completing health insurance claims. The student is expected to:

(A)   define Medicaid and Medicare;

(B)   discuss health care benefit programs such as Tricare and Civilian Health and Medical Program of the Department of Veteran Affairs (CHAMPVA);

(C)   list the steps for managing a worker's compensation case;

(D)   prepare reports summarizing patient diagnostic or care activities;

(E)   describe how to submit a reimbursement claim; and

(F)   identify methods of transmitting electronic claims.

Recommended Resources and Materials:

Medical /Coding Billing software

CPT - CPT Codes - Current Procedural Terminology - AAPC. (n.d.). Retrieved April 6, 2020, from https://www.aapc.com/resources/medical-coding/cpt.aspx

ICD - ICD-10-CM - International Classification of Diseases, Tenth Revision, Clinical Modification. (2020, March 31). https://www.cdc.gov/nchs/icd/icd10cm.htm

HCPCS - General Information | CMS. (n.d.). Retrieved April 6, 2020, from https://www.cms.gov/Medicare/Coding/MedHCPCSGenInfo

Recommended Course Activities:

- Visit to local hospital Health Information Department
- Volunteer opportunities at local hospital/physician's office
- Make applicable stages of internship within the health information department to include alpha-filing system, terminal digit filing system, release of information

Suggested methods for evaluating student outcomes:

- Coding Certification review weekly
- Health Informatics Presentation
- Practice Exams

Teacher qualifications:

An assignment for Principles of Health Informatics is allowed with one of the following certificates:

- Health Science: Grades 6-12.
- Health Science Technology Education: Grades 8-12.
- Vocational Health Occupations.
- Vocational Health Science Technology.

Additional information: