



Health Information Technology

Primary Career Cluster:	Business Management and Technology
Course Contact:	CTE.Standards@tn.gov
Course Code:	C12H34
Prerequisite(s):	<i>Introduction to Business & Marketing</i> (C12H26) or <i>Health Science Education</i> (C14H14)
Credit:	1
Grade Level:	11-12
Focused Elective Graduation Requirements:	This course satisfies one of three credits required for an elective focus when taken in conjunction with other <i>Health Science</i> courses.
POS Concentrator:	This course satisfies one out of two required courses to meet the Perkins V concentrator definition, when taken in sequence in an approved program of study.
Programs of Study and Sequence:	This is the second course in the <i>Health Sciences Administration</i> program of study.
Aligned Student Organization(s):	HOSA: http://www.tennesseehosa.org
Promoted Tennessee Student Industry Credentials:	Credentials are aligned with postsecondary and employment opportunities and with the competencies and skills that students acquire through their selected program of study. For a listing of promoted student industry credentials, visit https://www.tn.gov/education/career-and-technical-education/student-industry-certification.html
Teacher Endorsement(s):	030, 031, 032, 034, 037, 039, 041, 052, 054, 055, 056, 057, 152, 153, 158, 201, 202, 203, 204, 311, 430, 432, 433, 434, 435, 436, 471, 472, 474, 475, 476, 577, 720, 721, 722, 952, 953, 958
Required Teacher Certifications/Training:	None
Teacher Resources:	https://www.tn.gov/content/dam/tn/education/ccte/cte/cte_resource_health_science.pdf Best for All Central: https://bestforall.tnedu.gov/

Course-at-a-Glance

CTE courses provide students with an opportunity to develop specific academic, technical, and 21st century skills necessary to be successful in career and in life. In pursuit of ensuring every student in Tennessee achieves this level of success, we begin with rigorous course standards which feed into intentionally designed programs of study.

Students engage in industry relevant content through general education integration and experiences such as career & technical student organizations (CTSO) and work-based learning (WBL). Through these experiences, students are immersed with industry standard content and technology, solve industry-based problems, meaningfully interact with industry professionals and use/produce industry specific, informational texts.

Using a Career and Technical Student Organization (CTSO) in Your Classroom

CTSOs are a great resource to put classroom learning into real-life experiences for your students through classroom, regional, state, and national competitions, and leadership opportunities. Below are CTSO connections for this course, note this is not an exhaustive list.

- Participate in CTSO Fall Leadership Conference and HOSA and FCCLA Leadership Camp to engage with peers by demonstrating logical thought processes and developing industry specific skills that involve teamwork and project management
- Participate in conferences that promote career development such as DECA Career Pathways and Career Development Conferences
- Participate in HOSA career competitive events that highlight career development, including Health Career Display, interviewing skills, job seeking skills, and prepared speaking
- Participate in HOSA competitive events that highlight leadership development such as Outstanding HOSA Leader, Research Poster, Extemporaneous Writing, Organizational Leadership, and Researched Persuasive Writing and Speaking
- Participate in HOSA competitive events such as Medical Terminology, Medical Spelling, Health Education, Healthcare Issues Exam, and HOSA Bowl

For more ideas and information, visit Tennessee HOSA at <http://www.tennesseehosa.org>.

Using Work-based Learning (WBL) in Your Classroom

Sustained and coordinated activities that relate to the course content are the key to successful work-based learning. Possible activities for this course include the following. This is not an exhaustive list.

- **Standard 2** | Workplace tours and job shadowing with healthcare information professionals for students to learn more about job opportunities and required skills and knowledge. Career fair with local businesses for students to meet local business and industry professionals and learn more about the field.
- **Standard 3** | Guest speakers from the healthcare industry to discuss job opportunities, required skills and knowledge, and current issues in the healthcare information field.
- **Standards 5-10** | Workplace tours and job shadowing with local healthcare businesses and professionals for students to learn more about medical records, including clinical information data points, filing systems, types of record analysis, correct medical terminology, etc.
- **Standards 13-15** | Panel of guest speakers to discuss state and federal healthcare facilities and the use of types of health databases available.

- **Standard 16** | Virtual exchanges with partners in the healthcare information technology industry to develop students' mastery of the various healthcare registries available.
- **Standards 17-19, 21** | Guest speakers from the healthcare information industry to discuss different methods of data security, privacy practices, identity theft and fraud, and federal and state legislation affecting health information management.
- **Standard 20** | Workplace tours and job shadowing of local healthcare facilities and businesses to help illustrate the use of emerging health information technologies and practices for students.
- **Standard 22** | Job shadowing with healthcare professionals to help illustrate for students the different sources of reimbursement in healthcare services and how they relate to various payment systems.
- **Standards 23-27** | Workplace tours and job shadowing with healthcare information professionals to develop students' familiarity with key elements of medical coding and reimbursement, including medical nomenclatures and classification systems, types of data sets, terminology, etc.

Course Description

Health Information Technology is a third-level applied course in the *Health Informatics* program of study intended to prepare students with an understanding of the changing world of health care information. With the inclusion of electronic medical records, electronic billing, and electronic prescriptions, students in all healthcare professions must increasingly demonstrate competency in health information and health informatics. Upon completion of this course, proficient students will be able to differentiate among the types of health information/informatics, code and manage medical records, retrieve crucial data from health information systems and indexes, and understand the implications for careers in a range of health care fields.

Program of Study Application

This is the third course in the *Health Informatics* program of study. For more information on the benefits and requirements of implementing this program in full, please visit the Health Science website at <https://www.tn.gov/education/career-and-technical-education/career-clusters/cte-cluster-health-science.html>.

Course Standards

Careers

- 1) Define the broad field of informatics and discuss its increasing importance in health care. Compare and contrast the types of healthcare informatics, such as medical, clinical, biomedical, nursing, public health, and information science. Identify the impact each of these areas of informatics has had on its corresponding sector of healthcare.
- 2) Research careers within the healthcare informatics, health information management, and health information technology fields, and document educational requirements as well as state and national guidelines governing practicing professionals (such as licensing, certifications, training, and compliance). Using real-time and projected labor market data, identify local and national employment opportunities and determine areas of growth.

Complete a job application, resume, and cover letter for one of the jobs located in the search.

- 3) Analyze an ethical issue related to health informatics, such as ownership of and access to data, or the debate around respecting the privacy of individuals versus promoting the public good in the disclosure of health threats like HIV/AIDS and avian flu. Relate the findings of the research to the International Medical Informatics Association and American Health Information Management Association (AHIMA) Code of Ethics for Health Information Professionals.

Medical Records

- 4) Summarize the purposes and functions of the patient health record. Identify the purpose of each of the following components:
 - a. History and Physical
 - b. Discharge summary
 - c. Progress notes and orders
 - d. Nursing notes
 - e. Operative reports
 - f. Preoperative and postoperative anesthesia notes
 - g. Pathology reports
 - h. Consultation reports
 - i. Medication administration records
 - j. Consent forms
 - k. Ancillary reports (X-ray, lab, therapy reports)
 - l. Advance Directives (Do Not Resuscitate, living will, power of attorney, specialty records such as in OB, ER, and nursery)
- 5) Compose a list of clinical health information data points for alternative care settings including but not limited to ambulatory care, behavioral health, stand-alone clinical laboratory, home care, long-term care, stand-alone surgical center, and walk-in/urgent care clinics. For example, list all the typical diagnostic information collected as part of a routine physical. For each setting examined, explain why certain data points are of more interest or importance to the healthcare provider in that particular setting.
- 6) Explain the guidelines surrounding medical record storage, control, and retention as prescribed by local, state, and federal regulations.
- 7) Compare and contrast numbering and filing systems used in health information departments. Differentiate among and be able to retrieve files using the following health record numbering systems: enterprise-wide numbering, unit numbering, serial numbering, and serial-unit numbering.
- 8) Compare and contrast qualitative and quantitative record analysis, then practice the skill of assembling a patient health record. Apply alphabetical, numerical, and terminal digit filing methods to patient records. Analyze the record for completeness and accuracy.

- 9) Using correct medical terminology and authentication of patient record entries, compare and contrast the standards from external agencies (such as the Joint Commission and AHIMA) and facility policies regarding provider documentation responsibilities. Refer to the American Society for Testing and Materials (ASTM) publication ASTM E2369-12 Standard Specification for Continuity of Care Record.

Electronic Health Records

- 10) Define Electronic Health Record (EHR) and briefly explain its emergence and evolution. Compare the advantages and disadvantages of manual versus automated record systems. Identify barriers and challenges associated with the large-scale move to EHR in healthcare institutions.
- 11) Research how the Affordable Care Act and the American Recovery Reinvestment Act, Public Law 111-5 have impacted the evolution and integration of Electronic Health Records. Citing specific textual evidence from the laws, together with professional and scholarly commentary, debate whether these changes will benefit consumers and healthcare providers and analyze the short-term and long-term consequences.

Health Information Systems

- 12) Identify the multiple indexes maintained by health care facilities and state and federal agencies and create a brief profile of each based on evidence drawn from case studies. Record in the profile the content, significance, purpose, development, and maintenance of indexes such as the master patient index, disease index, and operation index.
- 13) Investigate the major parameters most frequently reported in health databases, including descriptive health care statistics and hospital-based statistics. Review a case scenario involving health care statistics and summarize the statistical information into a bar graph, pie chart, scatterplot, or other graphical representation. Identify the characteristics, units, and standards of each parameter, including applicable medical terminology.
- 14) Differentiate between the terms *registries* and *registers* and detail the characteristics of each. Review data from the National Center for Health Statistics (NCHS) in order to develop a vital statistics depiction of a community. Record items such as births per thousand, deaths, fetal death, marriages, divorces, and maternal health information in an electronic spreadsheet or chart.
- 15) Develop a digital or paper presentation to illustrate the purpose, content, and use of registries in the United States, such as:
 - a. Tumor Registry
 - b. Birth Registry
 - c. Trauma Registry
 - d. Brain Injury Registry
 - e. Implant Registry
 - f. Immunization Registry
 - g. Diabetes Registry

Legal Ramifications of Health Information

- 16) Summarize the Health Insurance Portability and Accountability Act (HIPAA) and applicable state laws to explain methods of ensuring data security and confidentiality by controlling access and release of information. Develop a policy and procedure explaining the process for providing access to health records for a variety of third parties, including but not limited to state licensing boards, court systems (i.e., in the event a subpoena is issued), insurance companies, law enforcement, government agencies, employers, and other health care providers.
- 17) Explain in a written, oral, or digital format the differences in privacy of individually identifiable health information, protected health information (PHI), and security rule. Review case studies to identify violations, preventive measures, and penalties that might be levied for violations.
- 18) Research major federal and state legislation that has impacted health information management. Identify the law or regulation, the year it was instated, the sponsor(s) of the legislation, a description of its content, any justification provided for its passage, and a case that has used the legislation in the defense on the patient/client's behalf.
- 19) Identify emerging technologies and practices related to health information, such as the use of mobile technologies, consumer outline to health records, and evidenced-based practices. Argue the ethical and legal complications associated with these practices.
- 20) Investigate identify theft and fraud associated with electronic health information. Develop a Public Service Announcement for the elderly or other vulnerable population to alert them to the problems and explain how to prevent fraud or theft of their health care information.

Coding and Reimbursement

- 21) Design a comprehensive teaching brochure for a new patient that explains the multiple sources of reimbursement in healthcare services and how medical records can affect the reimbursement rate. Report on areas such as capitation, Medicare, TennCare, prospective payment systems, Relative Value Resource Based systems (RVRB), case mix, MS-DRGs, healthcare insurance, and accountable care organizations.
- 22) Differentiate between medical nomenclatures and classification systems used for reporting to third-party payers for reimbursement, for data collection, and for education and research. Identify the components of the coding systems, including but not limited to: DSM, CPT, ICD-9-CM, ICD-10-CM, HCPCS Level II, CDT, NDC, and ICD-10-CM.
- 23) The Centers for Medicare and Medicaid Services (CMS) developed the prospective payment System (PPS), payment systems, fee schedules, and exclusions. Explain the payments systems of third-party payers as related to the types of forms they use. Develop a written or visual presentation explaining the differences among the payment systems.

- 24) Compare and contrast the following types of data sets related to medical coding and/or reimbursement: OASIS, HEDIS, UHDDS, DEEDS and MDS 3.0. Explain in an informational text the development of, purpose, advantages, challenges, and health care setting in which each might be used.
- 25) Practice the introductory skills related to coding for diagnosis using the ICD-9 or ICD-10 coding system and CPT coding system for procedures.
- 26) Define the terms related to billing and coding fraud and abuse. Evaluate multiple scenarios to identify fraud and/or abuse and explain how they can be avoided. Cite specific regulations and/or laws from the Fair Debt Collection Act, HIPAA, and the Privacy Act in the explanation.

Standards Alignment Notes

*References to other standards include:

- P21: Partnership for 21st Century Skills [Framework for 21st Century Learning](#)
 - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.