

**Health Science Career Cluster  
Applications of Health Information Technology  
Course Number 25.49600**

**Course Description:**

In this course, students will analyze the three main groups of HIT applications in hospitals and the clinical functions. The importance of patient confidentiality and security will be analyzed, as well the challenges involved with the Health Information Exchange implementation. Students will research the HIT project-lifecycle and HIT project-management components and stages. Further exploration of telemedicine and the use of electronic health records will be demonstrated in this course. Simulated lab experiences may be utilized.

Prerequisites for this course include Introduction to Healthcare and Essentials of Health IT.

Clinical site or classroom simulated experience: This component of Applications of Health IT is designed to give students practical application of previously - studied knowledge and skills. These experiences can occur in a variety of locations (including in a Health IT company, healthcare facility, or simulation in a classroom lab) appropriate to the student’s level of experience and availability of community resources as determined by the instructor. These exercises should be designed to enhance and supplement the course standards. \*\*With optional participation in a supplemental telemedicine online training there is the potential for telemedicine certification if all requirements are met. \*\*Successful completion of this career pathway along with any other requirements may lead to a potential eligibility to take the Certified Electronic Health Records Specialist Exam through a certifying body.

Any CTAE course that includes a clinical component (excluding a shadowing experience field trip) must adhere to identified guidelines under (WBL) work-based learning (available at [www.gadoe.org](http://www.gadoe.org) under WBL manual). Training for the CTAE teacher on these guidelines will be provided.

**Course Standard 1**

**HS-AHIT-1**

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

**Standard: Demonstrate employability skills required by business and industry.**

The following elements should be integrated throughout the content of this course.

**1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.**

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude

## Georgia Department of Education

	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé
Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

### 1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

### 1.3 Exhibit critical thinking and problem-solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads

**Georgia Department of Education**

	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

**1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.**

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict
Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

**1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply teamwork skills.**

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

**1.6 Present a professional image through appearance, behavior, and language.**

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success

## Georgia Department of Education

Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

### Support of CTAE Foundation Course Standards and Georgia Standards of Excellence L9-10RST 1-10 and L9-10WHST 1-10:

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

### Course Standard 2

#### HS-AHIT-2

**Design a mobile application and demonstrate utilization in a medical setting.**

- 2.1 Design a mobile app using a simulated mobile app tool.
- 2.2 Demonstrate (in a simulated setting) training a healthcare provider how to teach a patient to utilize the mobile app.
- 2.3 Research devices used for remote patient monitoring.

### Course Standard 3

#### HS-AHIT-3

**Examine the information technology services in hospitals and the major functional categories.**

- 3.1 Differentiate between hospital-based IT and provider offices and other medical facilities IT systems.
- 3.2 Explain the basic hospital IT infrastructure.
- 3.3 Evaluate a hospital IT organization and leadership and the clinical staff and hospital leadership (CEO, COO, CFO, and Chief Medical Informatics Officer (CMIO)).
- 3.4 Explain the variety of IT services in a hospital.
- 3.5 Describe the major functional categories of HIT in hospitals and the related applications including the administrative, financial, and clinical.

### Course Standard 4

#### HS-AHIT-4

**Demonstrate the three main groups of HIT applications in hospitals including the clinical functions of HIT in a simulated format.**

- 4.1 Examine the administrative functions of HIT, including ADT (Admissions, Discharge, Transfer), and enterprise-wide scheduling.
- 4.2 Evaluate the financial functions of the HIT, including charge capture, revenue cycle, and patient accounting.
- 4.3 Research the clinical functions of HIT including:
  - hospital departmental information systems
  - hospital electronic prescription and pharmacy system, medication dispensation challenges, and robotic dispensation
  - medical imaging and radiology systems
  - laboratory information system
- 4.4 Investigate the concept and role of the clinical decision support systems in HIT.
- 4.5 Evaluate HIT applications for physicians and nurses at bedside, including the following:
  - medical diagnosis

- Computerized Physician Order Entry (CPOE)
  - computer-based patient record system
  - nursing applications and documentation
  - planning and outcome identification
  - nursing care plan with effective documentation and charting.
- 4.6 Investigate medication administration, including the following:
- what can go wrong
  - the right method of medication administration
  - process automation

## Course Standard 5

### HS-AHT-5

#### Research the functionality and role of the Electronic Health Record system.

- 5.1 Research the functionality and role of the Electronic Health Record (EHR) system, including major features and components, impact on patient safety and outcomes, and the benefits and implementation challenges.

## Course Standard 6

### HS-AHIT-6

#### Evaluate health information flow and differentiate open systems interoperability and closed isolated systems.

- 6.1 Describe what is meant by open systems and interoperability versus closed isolated systems.
- 6.2 Discuss the role of data repositories and the challenges with incoming data sources.
- 6.3 Describe health information flow in a fully integrated, open environment, as well as the role of EHR in this structure.
- 6.4 Explain how building an application in the cloud can promote interoperability through using APIs in the digital health setting.
- 6.5 Compare and contrast different cloud computing models and key providers (including AWS, Azure, and Google).
- 6.6 Explain cloud computing concepts such as configurable resources, infrastructure as a service, shared responsibility, and monitoring.
- 6.7 Define the key cloud provider and basic terminologies used within Health IT.
- 6.8 Discuss how a basic network diagram of resources in the cloud works and how to protect them with firewall technologies/logical access restrictions and other key security measures in the cloud.

## Course Standard 7

### HS-AHIT-7

#### Adhere to patient privacy, security, and confidentiality regulations.

- 7.1 Describe the concept and importance of patient privacy, security and confidentiality including the following:
- HIPPA security regulations
  - protected health information and how to protect them
  - security program model
  - risk assessment and management
  - risk identification and mitigation

## Course Standard 8

### HS-AHIT-8

#### Evaluate the challenges associated with implementation of the Health Information Exchange, CCDs (Continuity of Care Documents) and CCRs (Continuity of Care Record).

- 8.1 Research the concept and practice of Health Information Exchange (HIE), CCDs, and CCRs.

- 8.2 Explain the challenges in implementing the Health Information Exchange (HIE).
- 8.3 Describe how to overcome the connectivity issues between heterogeneous systems and data exchange challenges.
- 8.4 Describe the role of standards such as Health Level 7 (HL-7), Digital Imaging and Communications in Medicine (DICOM), and solutions such as Service Oriented Architecture (SOA).

## Course Standard 9

### HS-AHIT-9

#### Assess the HIT project life cycle and the role of HIT project management.

- 9.1 Investigate the process and challenges of HIT system acquisition and implementation.
- 9.2 Explain the role and importance of project management.
- 9.3 Evaluate a HIT project life cycle.
- 9.4 Identify the HIT project management components and stages.
- 9.5 Explain project planning, work breakdown structure, and scheduling.
- 9.6 Describe the formal process of requirements identification, RFP preparation, assessment, evaluation, implementation strategies, and risk management.
- 9.7 Explore project management concepts including “waterfall development,” SCRUM development, Lean Development, and CI/CD (Continuous Integration/Continuous Delivery or Continuous Integration/Continuous Deployment).
- 9.8 Explore the fundamental steps in a CI/CD software development life-cycle (including the role of DevOps, security testing, and the difference from traditional development methods).

## Course Standard 10

### HS-AHIT-10

#### Evaluate the effectiveness and success of a successful telemedicine program.

- 10.1 Assess the telehealth industry and growth in Georgia and across the United States.
- 10.2 Evaluate nonclinical applications of telehealth.
- 10.3 Research the integrative strategies that bring these two modalities, telemedicine, and telehealth, together for a more connected care / patient medical home model(s).
- 10.3 Demonstrate (through simulation) appropriate video conferencing etiquette, proper record keeping, and presenter skills used in a telemedicine presentation.
- 10.4 Evaluate the necessary set-up of a telemedicine presenting/patient site and the medical provider site.
- 10.5 Perform (in a simulated lab setting) or observe clinical telemedicine applications, and proper storage and forwarding techniques of a telemedicine conference.

## Course Standard 11

### HS-AHIT-11

#### Demonstrate technical skills necessary for working with electronic health records.

- 11.1 Perform (simulated in a lab setting) or observe (in a health IT company or healthcare facility) skills related to utilization of hospital electronic health records and other health IT platforms including:
  - eMAR
  - patient charting
  - reporting
  - ePrescribing
  - patient demographics

## Course Standard 12

### HS-AHIT-12

#### Evaluate the value of health analytics.

- 12.1 Analyze what clinical data can reveal about a patient’s health status.
- 12.2 Assess the use of health analytics and the potential for a move to personalized medicine.
- 12.3 Evaluate how technology can be used to enhance the overall healthcare experience.

## Course Standard 13

### HS-AHIT-13

**Explore how related student organizations are integral parts of career and technology education courses through leadership development, school, and community service projects, entrepreneurship development, and competitive events.**

- 13.1 Research the history of Future Business Leaders of America (FBLA) and/or Future Health Professionals (HOSA).
- 13.2 Discuss the mission, purpose, motto, colors, official dress, and other distinguishing characteristics of FBLA and/or HOSA.
- 13.3 Explain how participation in FBLA and/or HOSA can promote lifelong responsibility for community service and professional growth and development.
- 13.4 Create a personal leadership plan to participate in programs, conferences, community service and competitive events on the local, state, and national level that align with the competencies, skills, and knowledge of this course.