Syracuse City School District
Career and Technical Education Program
Course Syllabus
HIT 100: Health Information Technology 100

Program Overview

Health Information Technology (HIT) is information technology applied to health care. It describes the secure collection and sharing of private health information between consumers, health care providers, government agencies and insurers. Throughout this four-year pathway, HIT students will learn how health care providers manage quality patient care through secure use and sharing of health information. Students will learn how to collect, share, maintain and protect patient data in a high-tech environment. They'll also learn the basics of medical terminology, anatomy and physiology that will prepare them for success in a post-secondary program. Students will participate in field experiences and job-shadowing to enrich their understanding of the skills and knowledge required for success in the field.

Course Description

This course provides students an introduction to the field of health information management (HIM). It is designed to give students a foundation in essential areas of HIM, including different types of health organizations, different types of medical staff and their functions, the role of information technology in health care, and the legal aspects of health information management with a focus on HIPAA regulations. Students will learn the purpose, components, organization and storage of health records with a focus on the use of electronic health records (EHR).

Pre-Requisites

N/A

Course Objectives

1. Understand the foundations of Health Information Technology and the employment and educational opportunities available.
2. Participate in hands-on activities and create products to demonstrate the knowledge and skills of a professional in Health Information Technology.
3. Understand and apply the terminology of Health Information Technology through participation in field experiences.
4. Understand the legal and ethical requirements of the Health Information Technology field and apply this information to make decisions.

Integrated Academics

.5 Health Credit (CHE 100)

Equipment and Supplies

- **School will provide:** All textbook and computer supplies.
- **Student will provide:** folder, notebook, pen and pencil

Textbook

Biedermann, Sue and Donna Olson. *Introduction to Health Information Management*. St. Paul, MN: Paradigm Education Solutions, 2015.

Grading

15% → Projects/Presentations/Papers
30% → Classwork
20% → Tests/Quizzes
10% → Homework
25% → Class Participation

Additional Course Policies

- Attendance is critical for program success. A large percentage of students' grades are based on attendance. Students who attend all class meetings are more likely to accomplish the course successfully.
- A daily grade is awarded on attendance, attitude, professionalism, and participation.
- If students are absent from class, they will lose participation points for that day.
- If it is an unexcused absence, students will not be able to receive any participation points for that day.
- If students are absent, any missed work will be placed in the class folder to be completed. It is the student's responsibility to check for missing assignments.
- Cells phones are not allowed in the laboratory or classroom. They need to be turned off.
- Use of cell phone will result in lost participation points and possible confiscation of the student's phone. Calls and texts can be made before or after class, or during break.
- Professional behavior is expected at all times.

Course Calendar

Quarter	Units of Study
1	• Classroom Expectations and Orientation • Introduction to Health Information Management • Legal Aspects of Health Information Management: HIPAA
2	• Healthcare Organizations • Hospital Organization and the Medical Staff • Health Record Purpose and Components
3	• Health Record Organization and Storage • Information Technology in Health Care • Electronic Health Records
4	• Electronic Health Records (cont.) • Legal Aspects of Health Information Management • Review and Final Examination

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
HIT 100: Health Information Technology 100

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 1-2 **Classroom Expectations and Orientation**	• What are the expectations for the health information technology classroom? • How can I develop study skills in order to be successful in HIT? • How can I manage my time this year? • How can I improve note-taking? • How can I study effectively to prepare for a test? • How is the computer keyboard used most effectively? • How are online internet applications used? • What is the importance of internet safety?	• Explain and follow classroom procedures. • Identify the importance of motivation for achieving career goals. • Evaluate ways to manage time. • Assess individual strengths and weakness. • Demonstrate effective note-taking. • Investigate various study skills for test taking and identify two effective skills. • Use the basic PC computer system to access the internet, type and save documents, and use online applications. • Explain the importance of internet safety.	**Written** • Assignments on Class Expectations • Self-Assessment **Performance** • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,10,11 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 1	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science**
Weeks 3-8 **Introduction to Health Information Management**	• How has health information management changed over time? • What are some of the skills necessary for success as an HIM professional? • What are some career paths within the health information management field? • What are the ethical responsibilities of an HIM professional? • What colleges provide programs to prepare HIM professionals to pursue career in the field?	• Summarize the history of health information management (HIM). • Describe where HIM professional work. • Describe the skills necessary for success as an HIM professional. • Demonstrate good communication and professionalism skills. • Research employment opportunities available to a registered health information technician. • Describe the types of positions found in a health information department. • Explain the ethical responsibilities of an HIM professional. • Research various 2 and 4-year colleges that offer post-secondary programs in HIM. • Prepare a professional cover letter and resume in preparation for college and/or job applications. • Identify and describe the components of a college application and the deadlines for submission.	**Written** • Assignment on Different HIT Professions • Research Project on College Programs • Chapter Quiz • Self-Assessment • Resume and Cover Letter • Professional Portfolio **Performance** • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,7,8,10,11 **Cluster Standards** HL 1,2,4 **Pathway Standards** HL-HI 1,2	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science** HS-ESS3-2
Weeks 9-10 **Legal Aspects of Health Information**	• What are the major provisions of the health Insurance Portability and Accountability	• Describe the major provisions of the health Insurance Portability and Accountability Act of 1996 (HIPAA)	**Written** • Assignment on HIPAA • Forms Project	**Career Ready Practices** CRP 1,2,4,8,9,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Management: HIPAA	Act of 1996 (HIPAA) and how do they apply to HIM? • What are the different types of consent forms? • What other legal documents may be included in a patent health record? • What are the steps in the release of information function? • How does an HIM professional apply principles of ethical decision making?	• Apply the HIPAA Privacy Rule and the HIPAA Security Rule to health information management. • Explain the different types of consent forms. • List other legal documents that may be included in a patent health record. • Demonstrate the steps in the release of information function. • Apply principles of ethical decision making.	• Quiz on HIPAA • Unit Test • Self-Assessment **Performance** • Teacher Observation Checklist		9-10L 1,2,3,4,5,6
				Cluster Standards HL 5,6	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,3	**Science**
Weeks 11-13 **Healthcare Organizations**	• How has health care evolved over time? • Why are there different types of health insurance? • What healthcare regulations relate to health information management? • Why are there different ways to provide health care?	• Summarize the evolution of health care over time. • Identify different types of health insurance. • Describe healthcare regulation as it relates to health information management. • Explain the role of acute care hospitals in the delivery of health care. • Compare health care provided in acute care facilities to health care provided in alternative settings. • Explain the role of regulatory bodies in the delivery of health care.	**Written** • Research Project on Evolution of Health Care • Chapter Quiz • Self-Assessment • Professional Portfolio **Performance** • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4,5	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2	**Science**
Weeks 14-15 **Hospital Organization and the Medical Staff**	• What departments and services are found in the healthcare setting? • What occupations available in health care? • What specialty healthcare units and clinics are common? • What medical specialties exist in the healthcare field? • How is the medical staff organized? • What are the differences between hospital and medical staff leadership and reporting structures?	• Explain what departments and services are found in the healthcare setting. • Describe occupations available in health care. • Describe specialty healthcare units and clinics. • List and describe several medical specialties. • Explain the basic structure and privileges of the medical staff. • Explain the differences between hospital and medical staff leadership and reporting structures.	**Written** • Assignment • Chapter Quiz • Unit Test • Professional Portfolio **Performance** • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4,5	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2	**Science**
Weeks 16-19 **Health Record Purpose and Components**	• What is the purpose and content of the patient health record? • What is the difference between paper, electronic, and hybrid patient health record formats?	• Explain the purpose of the patient health record. • Describe the content of the patent record. • Explain the difference between paper, electronic, and hybrid patient health record formats.	**Written** • Assignment • Chapter Quiz • Unit Test • Self-Assessment • Professional Portfolio **Performance**	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4,5	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• What is the role of the forms/screen committee. • What are the requirements governing the patient health record? • What is the importance of information governance? • What is clinical documentation improvement and what are its advantages?	• Describe the role of the forms/screen committee. • Apply selected documentation requirements governing the patient health record. • Explain the importance of and emerging issues related to information governance. • Describe clinical documentation improvement and its advantages.	• Teacher Observation Checklist	**Pathway Standards** HL-HI 1,2,3	**Science**
Weeks 20-23 **Health Record Organization and Storage**	• What are the similarities and differences in serial, serial unit, and unit numbering systems? • What are different methods for paper record filing? • What are the benefits and drawbacks of different digital record storage mediums? • What is the retrieval process for patient health records? • What are the advantages of electronic health record systems? • What are the consequences of failing to file documentation in a timely manner? • What are record retention and destruction practices? • What is the disaster-preparedness process?	• Compare serial, serial unit, and unit numbering systems. • Differentiate between the methods used for paper record filing. • Explain the benefits and the drawbacks of different digital record storage mediums. • Explain the retrieval process for patient health records. • Describe advantages of electronic health record systems. • Explain the consequences of failing to file documentation in a timely manner. • Summarize record retention and destruction practices. • Describe the disaster-preparedness process.	**Written** • Assignment • Chapter Quiz • Self-Assessment • Professional Portfolio **Performance** • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4,5	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science** HS-PS4-2
Weeks 24-26 **Information Technology in Health Care**	• What terminology is used in the field of information technology? • What is the difference between hardware and software? • How is information accessed and shared electronically? • How is data stored? • What is the organization and structure of the information technology department? • What career opportunities exist in health information technology?	• Define the terminology of information technology. • Identify the different between hardware and software. • Summarize how information is accessed and shared electronically. • Explain data storage capabilities. • Describe the organization and structure of the information technology department. • Identify career opportunities in health information technology.	**Written** • Assignment • Research Project • Chapter Quiz • Self-Assessment • Professional Portfolio **Performance** • Teacher Observation • Checklist	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4,5	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science**
Weeks 27-34 **Electronic Health Records**	• What is the function and the organization of electronic heath records (EHRs)? • What are the advantages and the disadvantages of the EHR?	• Explain the function and the organization of electronic heath records (EHRs). • Describe the advantages and the disadvantages of the EHR. • Explain the importance of EHR security.]	**Written** • Assignment • Chapter Quiz • Self-Assessment • Professional Portfolio	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards	**Literacy**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• What is the importance of EHR security?] • What kinds of safeguards are used to secure electronic personal health information? • What are the master patient index; admission, discharge, and transfer; practice management; and scheduling systems? • What are disaster-preparedness and downtime procedures for the EHR? • What different systems are used in a health information management (HIM) department? • How is the EHR changing HIM staff roles? • What are the benefits of the personal health record?	• Distinguish between administrative, physical, and technical safeguards used to secure electronic personal health information. • Describe the master patient index; admission, discharge, and transfer; practice management; and scheduling systems. • Demonstrate disaster-preparedness and downtime procedures for the EHR. • Describe the different systems used in a health information management (HIM) department. • Examine how the EHR is changing HIM staff roles. • Describe the benefits of the personal health record.	**Performance** • Teacher Observation Checklist	HL 2,4,5 **Pathway Standards** HL-HI 1,2,3	9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science** HS-ETS1-3, 1-4
Weeks 35-37 **Legal Aspects of Health Information Management**	• What is the structure and function of the US legal system? • What are the components of the legal health record? • What are the major provisions of the health Insurance Portability and Accountability Act of 1996 (HIPAA) and how do they apply to HIM? • What are the different types of consent forms? • What other legal documents may be included in a patent health record? • What is the impact of identity theft on HIM? • What are the steps in the release of information function? • What is the difference between a subpoena, a deposition, a court order and a warrant? • How does an HIM professional apply principles of ethical decision making?	• Summarize the structure and function of the US legal system. • Describe the components of the legal health record. • Describe the major provisions of the Health Insurance Portability and Accountability Act of 1996 (HIPAA) • Apply the HIPAA Privacy Rule and the HIPAA Security Rule to health information management. • Explain the different types of consent forms. • Describe other legal documents that may be included in a patent health record. • Explain the impact of identity theft on HIM. • Demonstrate the steps in the release of information function. • Differentiate among a subpoena, a deposition, a court order and a warrant. • Apply principles of ethical decision making.	**Written** • Assignment • Chapter Quiz • Self-Assessment • Professional Portfolio • Health Records Scenarios **Performance** • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,9,11 **Cluster Standards** HL 2,4,5 **Pathway Standards** HL-HI 1,2,3	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science** HS-ESS3-2
Weeks 38-40			**Written** • Self-Assessment	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Review and Final Examination	• What were my learning goals this year in Health information technology?	• Complete the assessment demonstrating a thorough knowledge of health information technology.	• Final Assessment • Professional Portfolio **Performance** • Final Assessment		9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 1,2,4,5	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science**

Syracuse City School District
Career and Technical Education Program
Course Syllabus
HIT 200: Health Information Technology 200

Program Overview

Health Information Technology (HIT) is information technology applied to health care. It describes the secure collection and sharing of private health information between consumers, health care providers, government agencies and insurers. Throughout this four-year pathway, HIT students will learn how health care providers manage quality patient care through secure use and sharing of health information. Students will learn how to collect, share, maintain and protect patient data in a high-tech environment. They'll also learn the basics of medical terminology, anatomy and physiology that will prepare them for success in a post-secondary program. Students will participate in field experiences and job-shadowing to enrich their understanding of the skills and knowledge required for success in the field.

Course Description

This course continues to provide students with a solid foundation in the field of health information management (HIM). Student will focus on the use of Electronic Health Records (EHR), including the contents and the EHR Software. Students will continue to build their knowledge and understanding of essential areas of HIM, including the legal aspects of health information management with a focus on HIPAA regulations, clinical documentation and reporting, diagnostic procedures and coding and billing and reimbursement. In addition, students will be concurrently enrolled in OCC HIT 120 Medical Terminology which will provide students with a detailed study of the definitions, pronunciation and spelling of medical terms that relate to medical science and human anatomy.

Pre-Requisites

HIT 100: Health Information Technology 100

Course Objectives

5. Understand the foundations of Health Information Technology and the employment and educational opportunities available.
6. Participate in hands-on activities and create products to demonstrate the knowledge and skills of a professional in Health Information Technology.
7. Define HIPAA regulations and identify all covered entities and their responsibilities.
8. Identify and use basic types of medical records.
9. Describe the benefits and drawbacks of electronic health records systems.
10. Maintain electronic health record software and databases.
11. Identify common medical prefixes, roots, and suffixes.
12. Recognize common medical abbreviations and their meanings.
13. Recognize the fundamental principles and resources used in medical coding and billing.
14. Recognize best practices of medical office management, including staffing, policy, scheduling, and equipment issues.

Integrated Academics

N/A

Equipment and Supplies

- **School will provide:** All textbook and computer supplies.
- **Student will provide:** N/A

Textbook

Foltz, Darline and Diane Lankisch. *Exploring Electronic Health Records, Second Edition*. St. Paul, MN: Paradigm Education Solutions, 2018.

Grading

30% → OCC Grade
30% → Classwork
15% → Tests/Quizzes
10% → Homework
15% → Class Participation

Additional Course Policies

- Attendance is critical for program success. A large percentage of students' grades are based on attendance. Students who attend all class meetings are more likely to accomplish the course successfully.
- A daily grade is awarded on attendance, attitude, professionalism, and participation.
- If students are absent from class, they will lose participation points for that day.
- If it is an unexcused absence, students will not be able to receive any participation points for that day.
- If students are absent, any missed work will be placed in the class folder to be completed. It is the student's responsibility to check for missing assignments.
- Cells phones are not allowed in the laboratory or classroom. They need to be turned off.
- Use of cell phone will result in lost participation points and possible confiscation of the student's phone. Calls and texts can be made before or after class, or during break.
- Professional behavior is expected at all times.

Course Calendar

Quarter	Units of Study
1	• Classroom Expectations and Review of HIT 100 • Overview of Electronic Health Records (EHR) • Content of the Health Record
2	• Introduction to Electronic Health Record Software • Administrative Management • Scheduling and Patient Management • Privacy, Security, and Legal Aspects of the EHR
3	• Clinical Documentation and Reporting • Diagnostic Procedures and Coding • Managing Insurance, Billing and Reimbursement
4	• Data Management and Analytics • The Personal Health Record and the Patient Portal • Review and Final Examination

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
HIT 200: Health Information Technology 200

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 1-2 **Classroom Expectations and Review of HIT 100**	• What are the expectations for the health information technology classroom? • How can I develop study skills in order to be successful in HIT? • How can I manage my time this year? • How can I improve note-taking? • How can I study effectively to prepare for a test? • What are some of the skills necessary for success as an HIM professional? • What are some career paths within the health information management field? • What are the ethical responsibilities of an HIM professional?	• Explain and follow classroom procedures. • Identify the importance of motivation for achieving career goals. • Evaluate ways to manage time. • Assess individual strengths and weakness. • Demonstrate effective note-taking. • Investigate various study skills for test taking and identify two effective skills. • Describe the skills necessary for success as an HIM professional. • Demonstrate good communication and professionalism skills. • Describe the types of positions found in a health information department. • Explain the ethical responsibilities of an HIM professional.	**Written** • Assignment on Study Skills • Self-Assessment **Performance** • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,10,11 **Cluster Standards** HL 1,2,4,5,6 **Pathway Standards** HL-HI 1	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science** HS-ESS3-2
Weeks 3-5 **Overview of Electronic Health Records (EHR)**	• What is the difference between electronic medical records (EMR) and electronic health records (EHR)? • What is interoperability and why is it important in the EHR? • What is the most common communication protocol? • What is a health IT system? • What is a learning healthcare system? • What is the Heath Information Technology for Economic and Clinical Health Act? • What are the incentives for implementing EHRs? • What is meaningful use? • What are the benefits and barriers to implementing EHRs? • How will implementing EHRs change the healthcare field?	• Define the terms electronic medical record (EMR) and electronic health record (EHR) and explain their similarities and their differences. • Explain the concept of interoperability and its importance in the EHR. • Define computer protocol and explain the most common communication protocol, Health Level 7 International (HL7). • Describe the health IT system. • Describe a learning healthcare system. • Describe the Heath Information Technology for Economic and Clinical Health Act and the federal incentive program for implementing EHRs. • Explain the concept of meaningful use and identify the main components of each stage. • Explain the benefits and barriers to implementing EHRs. • Explain the evolving potential roles in the EHR environment.	**Written** • Assignment on EHR • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science** HS-ETS1-4
Weeks 6-10			**Written**	**Career Ready Practices**	**ELA**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Content of the Health Record	• How has the health record changed over time? • What are the purposes of a health record? • What are the primary and secondary uses of an EHR system? • What types of data are found in the health record? • What are the purposes, format, and features of paper and electronic health records? • What is the importance of proper documentation in the health record? • What are the requirements and standards for the health record? • Who is responsible for the health record? • How do EHRs change the day-to-day responsibilities for health administrative staff? • How might healthcare roles evolve as more duties are electronically performed?	• Summarize the history of the health record. • Define the term health record and describe its multiple purposes. • Describe the primary and secondary uses of an EHR system. • Differentiate between the types of data in the health record. • Describe the purposes, format, and features of both the paper and electronic health record (EHR). • Explain the importance of proper documentation in the health record. • Describe the requirements and standards for the health record. • Explain ownership and stewardship of the health record. • Describe the transition from the paper health record to the electronic health record. • Compare and contrast the workflow of the paper health record versus the EHR.	• Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science**
Weeks 11-12 **Introduction to Electronic Health Record Software**	• How is an EHR system navigated? • What are the common security measures of an EHR system? • What are common features of an EHR? • What is the importance of backing up the EHR system?	• Explain the terms *input*, *output*, *processing*, *storage*, and *local area network*. • Demonstrate how to navigate an EHR system. • Describe the password and security measures of an EHR system. • Identify menu options in a simulated EHR. • Examine charting features in a simulated EHR. • Review the various scheduling features of a simulated EHR. • Examine secure messaging, document management, laboratory integration and e-prescribing features of a simulated EHR. • Explain the importance of backing up the EHR system. • Examine mobile features in an EHR system.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science**
Weeks 13-15	• What are the two main healthcare setting categories?	• Differentiate between the two main healthcare setting categories, and	**Written** • Assignment	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Administrative Management	• What are four types of healthcare settings? • What are the key elements of the patient entry process? • What are the purpose, goals, and elements of the master patient index? • What is the process for a patient requiring acute care? • What is the registration process for a patient requiring ambulatory care? • What is the difference between a new and established patient? • What is the importance of insurance information in the administrative management process? • What is the purpose of the documents included in an acute or ambulatory care patient's health record?	identify four types of healthcare settings. • Identify key elements of the patient entry process. • Identify the purpose, goals, and elements of the master patient index. • Explain the process for a patient requiring acute care. • Explain the registration process for a patient requiring ambulatory care. • Differentiate between a new and established patient. • Identify the importance of insurance information in the administrative management process. • Identify the purpose of the documents included in an acute or ambulatory care patient's health record.	• Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist		9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science** HS-ETS1-4
Weeks 17-18 **Scheduling and Patient Management**	• Why is it important to use the scheduling feature in an EHR? • What are the five types of scheduling methods? • What are the benefits of allowing patients to schedule appointments using a patient portal? • What information is required to schedule an appointment? • How is a provider schedule generated from the EHR? • How is a patient transferred in the EHR? • How can the patient tracker can improve workflow?	• Explain the importance of using the scheduling feature in an EHR. • Customize a healthcare facility's schedule. • Describe the five types of scheduling methods. • Describe the benefits of allowing patients to schedule appointments using a patient portal. • List the information required to schedule an appointment. • Schedule, cancel and reschedule an appointment in the EHR. • Generate a provider schedule from the EHR. • Transfer a patient in the EHR. • Check out or discharge a patient in the EHR. • Explain how the patient tracker can improve workflow.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science**
Weeks 19-20 **Privacy, Security, and Legal Aspects of the EHR**	• What is the Health Insurance Portability and Accountability Act of 1996 (HIPAA)? • Who is and who is not considered to be a covered entity under HIPAA?	• Define the Health Insurance Portability and Accountability Act of 1996 (HIPAA), specifically the Administrative Simplification provisions and the date enacted.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal	**Career Ready Practices** CRP 1,2,4,8,9,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4,5	**Literacy** 9-10RST 1,2,4,7,8,9

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• What are the basic principles of the Privacy Rule? • When is disclosure of protected health information permitted? • What release of information (ROI) functions are carried out by health information management (HIM) staff? • How is an accounting of disclosures log produced? • How does "minimum necessity" relate to the release of health information? • What is the enforcement and penalty process for violations of HIPAA privacy and security regulations? • What is the HIPAA Breach Notification Rule? • What are the two primary purposes for the development of the security standards of HIPAA? • What are the major sections of the standards of the HIPAA Security Rule? • What is the difference between required and addressable implementation specifications?	• Identify who is and who is not considered to be a covered entity under HIPAA. • Identify the basic principles of the Privacy Rule and differentiate between when disclosure of protected health information is permitted and when it is not permitted. • Demonstrate release of information (ROI) functions carried out by health information management (HIM) staff in the EHR environment. • Demonstrate how to produce an accounting of disclosures log. • Explain the concept of "minimum necessity" as it related to the release of health information. • Explain the enforcement and penalty process for violations of HIPAA privacy and security regulations. • Demonstrate competency in the use of EHR software as it relates to the release of health information. • Explain the HIPAA Breach Notification Rule. • State the two primary purposes for the development of the security standards of HIPAA. • List the major sections of the standards of the HIPAA Security Rule and provide safeguard examples that apply to each section. • Explain the difference between required and addressable implementation specifications.	• Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist		9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science**
Weeks 21-23 **Clinical Documentation and Reporting**	• What is the difference between structured and unstructured data? • What are manual and automated methods of data collection? • What are the elements of a history and physical exam? • How are progress notes entered into an EHR? • What is the role of assessments, orders, test results, and other clinical documentation in the EHR system?	• Differentiate between structured and unstructured data and identify examples of each. • Explain manual and automated methods of data collection. • Identify the elements of a history and physical examination. • Explain how to enter progress notes into an EHR, as well as the role of assessments, orders, test results, and other clinical documentation in the EHR system. • Identify the concerns related to cloned notes.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science** HS-ETS1-4

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• What are the concerns related to cloned notes? • What are the benefits and challenges of e-prescribing? • What is data mining and how is it related to structured and unstructured data? • What is clinical results reporting? • What are manual and automatic methods of results entry into the EHR? • How do EHR systems support public health initiatives?	• Define e-prescribing and its benefits and challenges. • Modify an e-prescription and override a drug allergy notification in an EHR. • Define data mining and its relationship to structured and unstructured data. • Explain clinical results reporting and describe manual and automatic methods of results entry into the EHR. • Explain how EHR systems support public health initiatives. • Create a meaningful report using a simulated EHR. • Report an immunization in the EHR.			
Weeks 24-27 **Diagnostic Procedures and Coding**	• What is the role of nomenclature in the EHR? • What classification systems are used for coding in the healthcare delivery system? • What are the purposes of diagnostic and procedural coding? • How do EHRs affect coding processes? • What is computer-assisted coding? • What are the coding concepts of *concurrent coding* and present on admission? • What is external and internal coding auditing?	• Define nomenclature and identify its role in the EHR. • Define classification systems and identify specific classification systems used for coding for each healthcare delivery system. • Explain the purposes of diagnostic and procedural coding. • Describe the classification systems used to code diagnoses and procedures, including the *International Classification of Diseases*; Current Procedural Terminology; Healthcare Common Procedural Coding System; the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*; and Current Dental Terminology. • Describe how EHRs affect coding processes. • Define and describe computer-assisted coding. • Define and explain important coding concepts, such as *concurrent coding* and present on admission. • Describe external and internal coding auditing. • Demonstrate coding processes utilizing EHR software.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7 **Science**
Weeks 28-30 **Managing Insurance, Billing and Reimbursement**	• What is health insurance? • How has health insurance changed over time? • What is the difference between between indemnity, managed	• Define health insurance and explain the concepts related to health coverage. • Describe the evolution of health insurance.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6 **Literacy** 9-10RST 1,2,4,7,8,9

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	care, group, and individual insurance plans? • What are different types of government-sponsored health plans? • What is the importance of verifying insurance and how is it done? • What is practice management and how does it relate to billing? • How doe EHRs affect billing processes?	• Differentiate between indemnity, managed care, group, and individual insurance plans. • Define and explain different types of government-sponsored health plans. • Explain the importance and methods of verifying insurance. • Define practice management and explain how it relates to billing and electronic office billing systems. • Describe how EHRs affect billing processes. • Demonstrate billing processes utilizing EHR software. • Demonstrate use of an electronic office billing system. • Demonstrate insurance claims processing. • Demonstrate use of practice management reports.	• Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist		9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science**
Weeks 31-34 **Data Management and Analytics**	• What data elements are in the EHR? • What are primary and secondary data sources? • What are the concepts and standards of data integrity? • What is data mapping? • What are data dictionary elements? • How is data collection used in maintaining health data? • What data sets, databases and indices are used in health care? • What is a data warehouse? • What is data governance? • What the principles of data quality management? • What is the role that data plays in decision-making? • What is the role of big data in health care? • What is the difference between informatics and health informatics?	• Identify data elements in the EHR. • Identify primary and secondary data sources. • Explain the concepts and standards of data integrity. • Define and explain the term data mapping. • Define and identify data dictionary elements. • Explain how data collection and tools are used in maintaining health data. • Identify data sets, databases and indices used in health care. • Define and explain the term data warehouse. • Explain data governance. • Identify the eight principles of data quality management. • Explain the role that data plays in decision-making. • Describe the role of big data in health care. • Define and differentiate informatics and health informatics.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 2,4	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science** HS-ETS1-4
Weeks 35-37 **The Personal Health Record**	• What is the personal health record (PHR) and what are its characteristics? • What are different types of PHR?	• Explain the personal health record (PHR). • Identify the characteristics or content of the PHR.	**Written** • Assignment • Research Project • Quiz	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
and the Patient Portal	• How are PHRs stored? • Who owns the PHR? • What are the advantages and the challenges to implementing a PHR? • What is the connection between the PHR and the EHR? • What are the steps in creating a PHR? • What are the components of the patient portal?	• Compare various types of PHR. • Explain the various ways PHRs are stored. • Explain the ownership of the PHR. • Identify advantages of the PHR. • Identify the challenges to implementing a PHR. • Explain the connection between the PHR and the EHR. • Describe the steps in creating a PHR. • Identify the components of the patient portal. • Demonstrate use of a simulated patient portal.	• Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Cluster Standards** HL 2,4	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science**
Weeks 38-40 **Review and Final Examination**	• What were my learning goals this year in Health information Technology?	• Complete the assessment demonstrating a thorough knowledge of health information technology.	**Written** • Self-Assessment • Final Assessment • Professional Portfolio **Performance** • Final Assessment	**Career Ready Practices** CRP 1,2,4,8,11	**ELA** 9-10R 1,2,4,7,8,9 9-10W 2,5,6,7 9-10SL 1,2,4,5,6 9-10L 1,2,3,4,5,6
				Cluster Standards HL 1,2,4,5	**Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,5,6,7
				Pathway Standards HL-HI 1,2,3	**Science**

Syracuse City School District
Career and Technical Education Program
Course Syllabus
HIT 300: Health Information Technology 300

Program Overview

Health Information Technology (HIT) is information technology applied to health care. It describes the secure collection and sharing of private health information between consumers, health care providers, government agencies and insurers. Throughout this four-year pathway, HIT students will learn how health care providers manage quality patient care through secure use and sharing of health information. Students will learn how to collect, share, maintain and protect patient data in a high-tech environment. They'll also learn the basics of medical terminology, anatomy and physiology that will prepare them for success in a post-secondary program. Students will participate in field experiences and job-shadowing to enrich their understanding of the skills and knowledge required for success in the field.

Course Description

This course introduces students to health information management practices and the software and computer applications used in health information processes. Emphasis will be placed on electronic information systems in both hospitals and physician's offices. Students will study how the health information management profession has changed and developed over time and the critical importance of professional ethics. Students will evaluate healthcare documentation against regulatory requirements, accreditation standards and the requisites of different types of healthcare facilities. Students will explore the various applications used in health information management, while learning the importance and methods for confidentiality and security of healthcare information. Students will have the opportunity to work with a simulated electronic medical record system to perform various kinds of health information management tasks.

Pre-Requisites

HIT 100: Health Information Technology 100
HIT 200: Health Information Technology 200

Course Objectives

1. Summarize the development of the health information management (HIM) profession.
2. Identify the responsibilities of HIM professionals.
3. Identify different professional organizations for the various specializations of HIM.
4. Explain ethics and ethical dilemmas related to health information management.
5. Describe the organization of the different types of hospitals and healthcare organizations.
6. Describe the influence of federal legislation on healthcare delivery.
7. Describe the purpose and content of health records within different healthcare settings.
8. Identify quality controls that can be put into place to manage health information management functions.
9. Describe the reimbursement process, forms, and support practice for healthcare reimbursement.
10. Define clinical terminologies, classifications, and code systems found in health data and information sets.
11. Ensure data quality and appropriateness in accordance with regulatory, licensing, and certification guidelines.
12. Use technology, including hardware and software applications, to perform data collection, storage, analysis and reporting of information.
13. Use of specialized software to perform common health information management processes such as record tracking, release of information, coding, grouping, registries, billing, quality improvement, and imaging.
14. Apply confidentiality and security measures to protect electronic health information.
15. Use appropriate software to retrieve information and present data.

Integrated Academics

1 CTE Integrated Science Credit

Equipment and Supplies

- **School will provide:** All textbook and computer supplies.
- **Student will provide:** N/A

Textbook

Sayles, Nanette B. and Lauralyn Kavanaugh Burke. *Introduction to Information Systems for Health Information Technology, Third Edition*. Chicago: American Health Information Management Association, 2018.

Sayles, Nanette B. and Leslie L. Gordon. *Health Information Management Technology: An Applied Approach, Fifth Edition*. Chicago: American Health Information Management Association, 2016.

Grading

30% → Projects/Presentations/Papers
30% → Classwork
20% → Tests/Quizzes
10% → Homework
10% → Class Participation

Additional Course Policies

- Attendance is critical for program success. A large percentage of students' grades are based on attendance. Students who attend all class meetings are more likely to accomplish the course successfully.
- A daily grade is awarded on attendance, attitude, professionalism, and participation.
- If students are absent from class, they will lose participation points for that day.
- If it is an unexcused absence, students will not be able to receive any participation points for that day.
- If students are absent, any missed work will be placed in the class folder to be completed. It is the student's responsibility to check for missing assignments.
- Cells phones are not allowed in the laboratory or classroom. They need to be turned off.
- Use of cell phone will result in lost participation points and possible confiscation of the student's phone. Calls and texts can be made before or after class, or during break.
- Professional behavior is expected at all times.

Course Calendar

Quarter	Units of Study
1	• Classroom Expectations and Review of HIT 200 • Introduction to Health Information Technology • Introduction to HealthCare Delivery Systems • Health Record Purposes, Content and Documentation
2	• Health Information Functions, Purpose and Users • Secondary Data Sets • Reimbursements and Classification Systems
3	• Introduction to Computers in Health Information: Microsoft Word and Excel • Information Integrity and Data • Computers in Health Information
4	• Administrative Information Systems • Clinical Information Systems • Electronic Health Records • Consumer Informatics • Security • Review and Final Examination

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
HIT 300: Health Information Technology 300

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Week 1 **Classroom Expectations and Review of HIT 200**	• What are the expectations for the health information technology classroom? • How can I develop study skills in order to be successful in HIT? • How can I manage my time this year? • How can I improve note-taking? • How can I study effectively to prepare for a test? • What are some of the skills necessary for success as an HIM professional? • What are some career paths within the health information management field?	• Explain and follow classroom procedures. • Identify the importance of motivation for achieving career goals. • Evaluate ways to manage time. • Assess individual strengths and weakness. • Demonstrate effective note-taking. • Investigate various study skills for test taking and identify two effective skills. • Describe the skills necessary for success as an HIM professional. • Demonstrate good communication and professionalism skills. • Describe the types of positions found in a health information department.	**Written** • Assignment • Quiz • Self-Assessment **Performance** • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,10,11 **Cluster Standards** HL 1,2,4,5,6 **Pathway Standards** HL-HI 1	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science**
Week 2 **Introduction to Health Information Technology**	• How has the health information management (HIM) profession developed from its beginnings to the present? • How must professional practice evolve to accommodate changes in the healthcare environment? • What are the responsibilities of HIM professionals? • What is the purpose and structure of the American Health information Management Association (AHIMA)? • What are AHIMA's certification processes? • What is the accreditation process of the Commission on Accreditation for Health Informatics and Information Management Education (CAHIM)? • What are the professional organizations for the various specializations of HIM? • What ethics and ethical dilemmas are related to the HIM profession?	• Summarize the development of the health information management (HIM) profession from its beginnings to the present. • Discuss how professional practice must evolve to accommodate changes in the healthcare environment. • Identify the responsibilities of HIM professionals. • Describe the purpose and structure of AHIMA. • Explain AHIMA's certification processes. • Discuss the accreditation process of CAHIM. • Identify the appropriate professional organizations for the various specializations of HIM. • Explain ethics and ethical dilemmas. • Interpret the concepts of morality, code of conduct, and moral judgment. • Explain the AHIMA Code of Ethics. • Differentiate how cultural issues affect health and healthcare quality, cost, and health information management. • Evaluate the consequences of a breach of healthcare ethics.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,9,10,11 **Cluster Standards** HL 1,2,4,5,6 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science** HS-ESS3-2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• What concepts of morality, code of conduct, and moral judgment are relevant to the HIM profession? • What is the AHIMA Code of Ethics? • How do cultural issues affect health and healthcare quality, cost, and health information management? • What are the consequences of a breach of healthcare ethics? • What are the ethical issues related to research? • What is the process of ethical decision making? • What has been the impact of cultural diversity policies and programs on the HIM profession?	• Identify ethical issues related to research. • Identify the process of ethical decision making. • Evaluate cultural diversity policies and programs.			
Weeks 3-4 **Introduction to HealthCare Delivery Systems**	• What is the basic organization of various types of hospitals and healthcare organizations? • How do internal and external forces shape the healthcare industry? • What are the roles of various stakeholders in the healthcare delivery system? • What is the influence of federal legislation on healthcare delivery? • What are the various functional components of an integrated delivery system? • What is the role of government in healthcare services?	• Describe the basic organization of the various types of hospitals and healthcare organizations. • Describe how internal and external forces have shaped the healthcare industry. • Differentiate the roles of various stakeholders throughout the healthcare delivery system. • Describe the influence of federal legislation on healthcare delivery. • Identify the various functional components of an integrated delivery system. • Explain the role of government in healthcare services.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science**
Weeks 5-10 **Health Record Purposes, Content and Documentation**	• What are documentation standards? • How do medical staff bylaws, accreditation entities, and state and federal regulations influence the documentation practice standards of healthcare provider organizations? • How do documentation standards drive patient safety and quality within the healthcare industry? • How has the definition of a legal health record changed as	• Define documentation standards. • Describe how medical staff bylaws, accreditation entities, and state and federal regulations influence the documentation practice standards of healthcare provider organizations. • Articulate how documentation standards drive patient safety and quality within the healthcare industry. • Describe how the definition of a legal health record has changed as healthcare providers have more widely	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science** HS-ETS1-3, 1-4

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	healthcare providers have more widely adopted electronic health record (EHR) technologies? • What is the documentation content of health records within different healthcare settings? • What are the potential advantages and disadvantages of different health record media? • What are the differences among consents, authorizations, and acknowledgements? • What are the roles that various healthcare professionals play in health record documentation?	adopted electronic health record (EHR) technologies. • Identify and describe the documentation content of health records within different healthcare settings. • Compare different health record media and evaluate the potential advantages and disadvantages of each. • Describe the differences among consents, authorizations, and acknowledgements. • Describe the roles that various healthcare professionals play in health record documentation.			
Weeks 11-13 **Health Information Functions, Purpose and Users**	• What is a health record and what are its purposes? • Who are the users of the health record and how do they use it? • What are the processes for both paper-based and electronic health records? • How is the master patient index managed? • What quality controls can be put into place to manage health information management functions. • What are the basic health record processes? • What are the basic health information management information systems?	• Define the term health record. • Explain the purposes of the health record. • Identify the users of the health record and how they use it. • Identify processes in paper-based and electronic health records. • Explain how to manage the master patient index. • Identify quality controls that can be put into place to manage health information management functions. • Explain health record processes. • Explain the health information management information systems.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science**
Weeks 14-17 **Secondary Data Sources**	• What is the difference between primary and secondary data and between patient-identifiable and aggregate data? • Who are the internal and external users of secondary data? • What the similarities and differences in the facility-specific indexes commonly found in hospitals? • What registries are used in hospitals? • What terms are applicable to each type of secondary record or database?	• Distinguish between primary and secondary data and between patient-identifiable and aggregate data. • Identify the internal and external users of secondary data. • Compare the facility-specific indexes commonly found in hospitals. • Describe the registries used in hospitals according to purpose, methods of case definition and case finding, data collection methods, reporting and follow-up, and pertinent laws and regulation affecting registry operations. • Define the terms pertinent to each type of secondary record or database.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• What agencies are responsible for approval, education, and certification for cancer, immunization, and trauma registries? • What is the purpose and content of different healthcare databases?	• Discuss the agencies for approval, education, and certification for cancer, immunization, and trauma registries. • Distinguish among healthcare databases in terms of purpose and content.			
Weeks 18-20 **Reimbursement and Classification Systems**	• What is involved in the healthcare reimbursement process? • How is commercial, private, and employer-based healthcare insurance different? • What are the purposes and benefits of government-sponsored health programs? • What is managed care? • What are some different fee-for-service reimbursement methods? • What is the purpose and use of fee schedules, chargemaster, and auditing procedures in the reimbursement process? • What is the revenue cycle process? • What is the importance of clinical terminologies, classifications, and code systems to healthcare? • What is the content of SNOMED CT, Current Procedural Terminology, and terminologies used in nursing practice? • What are the different classification systems and their purposes? • What code systems are used for laboratory and clinical observations; professional services, procedures, and supplies; and drugs? • What clinical terminologies, classifications, and code systems are found in health data and information sets? • Why is it necessary to have a database of clinical terminologies, classifications, and code systems?	• Describe the reimbursement process, forms, and support practice for healthcare reimbursement. • Differentiate commercial, private, and employer-based healthcare insurance. • Describe the purpose and benefits of government-sponsored health programs. • Describe managed care. • Identify different fee-for-service reimbursement methods. • Explain the purpose and use of fee schedules, chargemaster, and auditing procedures that support the reimbursement process. • Outline the revenue cycle process. • Explain the importance of clinical terminologies, classifications, and code systems to healthcare. • Describe the content of SNOMED CT, Current Procedural Terminology, and terminologies used in nursing practice. • Examine the different classification systems and their purposes. • Identify code systems for laboratory and clinical observations; professional services, procedures, and supplies; and drugs. • Define clinical terminologies, classifications, and code systems found in health data and information sets. • Recognize the need to have a database of clinical terminologies, classifications, and code systems.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science** HS-ETS1-3
Weeks 21-22			**Written**	**Career Ready Practices**	**ELA**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Introduction to Computers in Health Information: Microsoft Word and Excel	• What is the impact of computers on healthcare? • What has been the history of computers in healthcare? • What are the similarities and differences between the Internet, intranet and extranet? • What are data analytics and health informatics and how do information systems (ISs) apply? • What are the names and functions of the Word interface components? • How are documents created, edited, saved, and printed? • How are text and styles formatted? • How are headers, footers, footnotes, and graphics added to a document? • How are the Spelling and Grammar Checker, and Microsoft Help used? • How are documents manipulated using functions such as find and replace; cut, copy, replace? • What are the names and functions of the Excel interface components? • How is data entered and edited? • How are data and cells formatted? • How are formulas constructed? • How are charts created and modified? • How are worksheets previewed and printed? • How is the Excel online Help feature used?	• Describe the impact of computers on healthcare. • Summarize the history of computers in healthcare. • Compare and contrast the Internet, intranet and extranet. • Explain data analytics and health informatics and how information systems (ISs) apply. • Indicate the names and functions of the Word interface components. • Create, edit, save, and print documents including documents with lists and tables. • Format text and styles. • Add a header and footer footnote, and graphics to a document. • Use the Spelling and Grammar Checker as well as Microsoft Help. • Manipulate documents using functions such as find and replace; cut, copy, replace. • Indicate the names and functions of the Excel interface components. • Enter and edit data. • Format data and cells. • Construct formulas, including the use of built-in functions, and relative and absolute references. • Create and modify charts. • Preview and print worksheets. • Use the Excel online Help feature.	• Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science**
Weeks 23-26 **Information Integrity and Data**	• What are the various data sources that populate the electronic health record? • What are the characteristics of the AHIMA data quality management model? • What is the appropriate field type for different data elements? • How can data quality and data integrity issues be addressed?	• Identify the various data sources that populate the electronic health record. • List and give examples of each of the AHIMA data quality management model characteristics. • Choose the appropriate field type for a data element. • Make recommendations to address data quality and data integrity issues.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science** HS-PS4-2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
			• Teacher Observation Checklist		
Weeks 27-30 **Computers in Health Information Management**	• What information systems are needed to support efficient operations in the health information management (HIM) department? • What are the differences between various software products used in the HIM department? • How can the quality of data within the HIM system be improved?	• Identify the information systems needed to support efficient operations in the health information management (HIM) department. • Differentiate between the various software products used in the HIM department. • Explain how to improve the quality of data within the HIM system.	**Written** • Assignment on • Research Project on • Quiz on • Self-Assessment **Performance** • Safety Checklist • Procedure Checklist • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science**
Weeks 31-33 **Administrative and Clinical Information Systems**	• What are administrative and clinical information systems? • What administrative information system is needed for a particular task? • What clinical information system is needed to meet the needs of a healthcare facility? • What is the difference among administrative and clinical information systems? • What is the difference between a decision support system and an executive information system? • how do administrative systems impact health information management practices? • How can document management systems be used and implemented?	• Define administrative and clinical information systems. • Determine what administrative information system is needed for a particular task. • Determine what clinical information system is needed to meet the needs of a healthcare facility. • Differentiate among administrative and clinical information systems. • Differentiate between a decision support system and an executive information system. • Describe how administrative systems impact health information management practices. • Make recommendations on the use and implementation of document management systems.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science** HS-ETS1-2
Weeks 34-35 **Electronic Health Records**	• How is a plan for the development and implementation of an electronic health record (EHR) created? • What is the role of clinical vocabularies in the EHR? • Why is the EHR needed? • What issues and possible solutions related to the EHR? • How could a provider be educated on benefits of the EHR? • What information systems are required to support the EHR? • What is the need for the personal health record?	• Create a development and implementation plan for an electronic health record (EHR). • Explain the role of clinical vocabularies in the EHR. • Explain the need for the EHR. • Describe issues related to the EHR and possible solutions. • Summarize the process for educating a provider on benefits of the EHR. • Identify multiple information systems required to support the EHR. • Explain the need for the personal health record.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science** HS-ETS1-3, 1-4

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 36-37 **Consumer Informatics**	• What is consumer informatics? • What is the difference between a patient portal and a personal health record? • What is the impact of health literacy on patients?	• Explain consumer informatics. • Differentiate between the patient portal and a personal health record. • Explain the impact of health literacy on patients.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,11 **Cluster Standards** HL 2,4 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science**
Weeks 38-39 **Security**	• What training does healthcare staff needs on security issues? • What are some federal security regulations? • What are some recommended security measures for a healthcare facility? • What are different policies and procedures on security practices? • How can access to protected health information be controlled? • How is an audit for security violations conducted?	• Explain what training healthcare staff needs on security issues. • Describe federal security regulations. • Describe recommended security measures for a healthcare facility. • Evaluate different policies and procedures on security practices. • Describe how to control access to protected health information. • Explain how to conduct an audit for security violations.	**Written** • Assignment • Research Project • Quiz • Self-Assessment • Vocabulary Journal • Professional Portfolio **Performance** • Feedback from Career Coaches • Teacher Observation Checklist	**Career Ready Practices** CRP 1,2,4,8,9,11 **Cluster Standards** HL 2,4,5,6 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science** HS-PS4-2
Week 40 **Review and Final Examination**	• What were my learning goals this year in Health information Technology?	• Complete the assessment demonstrating a thorough knowledge of health information technology.	**Written** • Self-Assessment • Final Assessment • Professional Portfolio **Performance** • Final Assessment	**Career Ready Practices** CRP 1,2,4,8,9,11 **Cluster Standards** HL 2,4,5,6 **Pathway Standards** HL-HI 1,2,3	**ELA** 11-12R 1,2,4,7,8,9 11-12W 2,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3,4,5,6 **Literacy** 11-12RST 1,2,4,7,8,9 11-12WHST 2,5,6,7 **Science**

Syracuse City School District
Career and Technical Education Program
Course Syllabus
HIT 400: Health Information Technology 400

Program Overview

Health Information Technology (HIT) is information technology applied to health care. It describes the secure collection and sharing of private health information between consumers, health care providers, government agencies and insurers. Throughout this four-year pathway, HIT students will learn how health care providers manage quality patient care through secure use and sharing of health information. Students will learn how to collect, share, maintain and protect patient data in a high-tech environment. They'll also learn the basics of medical terminology, anatomy and physiology that will prepare them for success in a post-secondary program. Students will participate in field experiences and job-shadowing to enrich their understanding of the skills and knowledge required for success in the field.

Course Description

HIT 400 integrates the skills and knowledge learned in previous Health Information Technology courses. This is a laboratory-based course that investigates the structure and function of the human body. Topics covered will include the basic organization of the body, biochemical composition, and major body systems along with the impact of diseases on certain systems. Students will engage in many topics to truly understand the structure and function of the human body. Working from the topics of basic anatomical terminology and the biochemical composition of the human body, to detailed investigation of each of the major systems of the body, students will learn through reading materials, study guides, unit worksheets, group work, projects, and labs. Students will also expand on their professional skills through field trips, internships, and research.

Pre-Requisites

HIT 100: Health Information Technology 100
HIT 200: Health Information Technology 200
HIT 300: Health Information Technology 300

Course Objectives

Upon completion of the course students will:

1. Explain the concept of homeostasis, how it interrelates basic human body functions and life processes, and demonstrate a knowledge of the organization of the human body.
2. Describe the major anatomical components of each human body system studied, describe their anatomical locations and structures, and explain their physiological functions at both the organ and cellular levels.
3. Apply the concepts learned in the lecture to understand and analyze laboratory activities and observations.
4. Obtain healthcare provider CPR and First Aid.
5. Complete job shadows and internship experiences.

Integrated Academics

1 Integrated CTE English Credit

Equipment and Supplies

- **School will provide:** All textbook and computer supplies.
- **Student will provide:** N/A

Textbook

Marieb, Elaine N. and Lori A. Smith. *Human Anatomy & Physiology Laboratory Manual, Cat Version, 12th Edition*. New York: Pearson, 2015.

Martini, Frederic, Judi L. Nath and Edwin F. Bartholomew. *Fundamentals of Anatomy and Physiology, 10th edition.* New York: Pearson, 2014.

NOTE: Older and/or used editions are acceptable. Keep in mind that page numbers may be different.

Grading

30% → Projects/Presentations/Papers
30% → Classwork
20% → Tests/Quizzes
10% → Homework
10% → Class Participation

Additional Course Policies

- Attendance is critical for program success. A large percentage of students' grades are based on attendance. Students who attend all class meetings are more likely to accomplish the course successfully.
- A daily grade is awarded on attendance, attitude, professionalism, and participation.
- If students are absent from class, they will lose participation points for that day.
- If it is an unexcused absence, students will not be able to receive any participation points for that day.
- If students are absent, any missed work will be placed in the class folder to be completed. It is the student's responsibility to check for missing assignments.
- Cells phones are not allowed in the laboratory or classroom. They need to be turned off.
- Use of cell phone will result in lost participation points and possible confiscation of the student's phone. Calls and texts can be made before or after class, or during break.
- Professional behavior is expected at all times.

Course Calendar

Quarter	Units of Study

1	• Homeostasis
	  ○ Basic Chemistry
	  ○ Biochemistry
	• Cell Physiology
	  ○ Cell Structure, Function, and Reproduction
	  ○ Cellular Transport and Protein Synthesis
	  ○ Cellular Energetics
	• Tissues
	  ○ Integumentary System
	  ○ Bone
	  ○ Muscles

2	• Respiratory System • Urinary System • Professional Skills

3	• Central Nervous System
	  ○ Electrophysiology and Neurons
	  ○ Spinal Cord and Reflexes
	  ○ The Brain
	• Peripheral Nervous System
	  ○ Sensory Pathways – Somatic Nervous System
	  ○ Autonomic Nervous System
	• Endocrine System
	• Cardiovascular System
	  ○ Blood
	  ○ The Heart

4	• Cardiovascular System: Blood Vessels and Regulation • Immune System • Digestive System • Reproductive System • Professional Skills

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
HIT 400: Health Information Technology 400 – Anatomy and Physiology

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Weeks 1-2 **Homeostasis: Basic Chemistry**	• What is matter and how is it organized to form different structures? • How does the structure of an atom make each element unique? • Why is homeostasis important and what are the results of a homeostatic imbalance? • How can directional terms and regional terms help describe location in the body?	• Identify the sub-atomic particles, their charges, and their role in atomic structure. • Differentiate between elements, molecules, and compounds. • Identify common elements and ions within the human body. • Identify a molecule as either polar or nonpolar. • Compare and contrast ionic, covalent and hydrogen bonds. • State how the structure of water relates to its function. • Explain the concept of homeostasis and discuss the importance of homeostatic regulation. • Demonstrate the correct use of directional and regional terms.	• Lab Reports • Practice Worksheets • Discussions • Graphic Organizer • Case Study Analysis • Quiz	**Career Ready Practices** CRP 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-3
Week 3 **Homeostasis: Biochemistry**	• How do molecules bond together to form larger molecules? • What is an organic molecule and how does it differ from an inorganic molecule? • Which monomers are used to build the major macromolecules used in the body? • How are the major macromolecules used in the body? • What is the function of DNA and RNA? • What is ATP used for in living things? • How does protein structure affect its function? • What role do enzymes play in chemical reactions? • How does structure of an enzyme determine its function?	• Describe the general structure of a macromolecule, including the reactions used to synthesize and break down. • Describe the structure and functions of the following classes of carbohydrates: monosaccharides, disaccharides, and polysaccharides. • Describe the structure and functions of the following classes of lipids: fatty acids, glycerides, eicosanoids, steroids, phospholipids, and glycolipids. • Describe the structure and functions of the following classes of nucleic acids: DNA and RNA. • Describe the structure and function of ATP. • Describe protein structure, including the four levels of structural complexity and how protein structure can be disrupted by denaturation. • List the primary functions of proteins in the body. • Explain the function and importance of enzymes.	• Lab Reports • Practice Worksheets • Discussions • Models • Case Study Analysis • Unit Test	**Career Ready Practices** CRP 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-6
Week 4	• What is a cell?		• Lab Reports	**Career Ready Practices** CRP 1,2,4,7,8,11,12	**ELA** 11-12R 1,4,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Cell Physiology: Cell Structure, Function, and Reproduction	• What is an organelle and how does each organelle contribute to cell function? • How would cell function change if organelles did not work together? • How do cells reproduce? • What is the purpose of asexual reproduction? • What are the steps of mitosis? • What are the end products of mitosis?	• Identify and explain the function of eukaryotic cell organelles. • Explain the stages of cell cycle, including interphase, mitosis, and cytokinesis. • Identify mitosis as a form of asexual reproduction. • Explain the role of mitosis in the human body. • List and explain the steps of mitosis. • Describe how mitosis forms two genetically identical, diploid daughter cells.	• Practice Worksheets • Discussions • Student-Created Diagrams • Models • Case Study Analysis • Research Summaries • Quiz		11-12W 1,2,4,5,6,7 11-12SL 1,4 11-12L 1,2,3,6
				Cluster Standards HL 1	**Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7
				Pathway Standards HL-HI 2,3	**Science** HS-LS1-2
Week 5 **Cell Physiology: Cellular Transport and Protein Synthesis**	• How does the structure of the cell membrane determine what can enter/exit the cell? • What are the different mechanisms used to transport molecules across a cell membrane? • What effect do different types of solutions have on the movement of solutes? • How do cells move large molecules across the cell membrane? • What is the function of DNA? • How is a genetic trait determined? • What molecules make up the structure of DNA? • What are the bases that make up DNA and RNA and why are they important? • What are proteins and how are they used in the human body? • What are the steps required to produce a protein in a cell? • What happens to a protein after it is built? • How does protein structure affect its function?	• Describe the structure and function of the plasma membrane. • List and describe the various types of passive cell transport. • Describe active cell transport. • Describe the various types of vesicular transport. • Describe the functions of the major cellular locations and components involved in gene expression including the nucleus, nuclear membrane, cytosol, ribosomes, rough endoplasmic reticulum. • List and describe the key enzymes, steps, and cellular components involved in the process of transcribing sequences of DNA into the three types of RNA. • Describe the specific processes involved in producing mRNA transcripts including initiation, elongation, and termination steps along with additional processing steps required to produce mature mRNA transcripts ready to be translated in the cytosol. • Describe the specific enzymes, cellular components, and processes involved in translation of mRNA including initiation, elongation, and termination steps along with additional processing steps required to produce functional proteins in either the cytosol or rough endoplasmic reticulum.	• Lab Reports • Practice Worksheets • Discussions • Models • Simulations • Research Summary • Quiz	**Career Ready Practices** CRP 1,2,4,7,8,11,12	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5,6,7 11-12SL 1,4 11-12L 1,2,3,6
				Cluster Standards HL 1	**Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7
				Pathway Standards HL-HI 2,3	**Science** HS-LS1-1
Week 6 **Cell Physiology: Cellular Energetics**	• What is ATP used for in living things? • How does the structure ATP relate to its function? • What molecules are required to produce ATP?	• Describe the structure of ATP and explain how energy is stored in ATP. • Explain the pathways used in ATP production under both aerobic and anaerobic conditions. • Describe the pathways involved in cellular ATP production including glycolysis,	• Lab Reports • Practice Worksheets • Discussions • Simulations • Research summaries • Unit Test	**Career Ready Practices** CRP 1,2,4,7,8,11,12	**ELA** 11-12R 1,4 11-12W 1,2,4,5,6,7 11-12SL 1,4 11-12L 1,2,3,6
				Cluster Standards HL 1	**Literacy** RST 1,2,4,7,8,9

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• What role does the presence of oxygen play in the production of ATP? • What are the steps involved in aerobic and anaerobic respiration? • How are hydrolysis and dehydrations synthesis used to recycle ATP?	Kreb's cycle and the electron transport chain. • Explain how energy is recycled using the processes of dehydration synthesis and hydrolysis of ATP/ADP.			WHST 2,4,5,6,7
				Pathway Standards HL-HI 2,3	**Science** HS-LS1-1
Week 7 **Tissues: Integumentary System**	• What are the categories used to define levels of cellular organization in the human body? • What are the main types of tissues in the body? • How does the structure of tissue in the human body relate to its function? • What are the functions of skin? • How is the skin organized? • What types of tissue makes up the layers of the skin? • What role do accessory organs such as sweat glands and sebaceous glands play in the skin? • How does cellular structure of skin cells relate to their function? • What happens to skin as it is exposed to sunlight and as a person ages? • Which layers of the skin are damaged in different types of burns? • How does burn damage in the skin affect other functions in the body? • What events occur following superficial or deep skin damage?	• Explain the levels of organizational units used within the human body (organelles, cells, tissues, organs, organ systems). • Identify characteristics of the four categories of human tissue. • Identify the components and the general functions of the integumentary system. • List and describe the accessory structures of the integumentary system and their functions. • Explain why the histology of the epidermis is well suited for its function • Describe the distinctive features of each of the five layers of thick skin including the various cells present and the function of each. • Describe the characteristics of the hypodermis (subcutaneous layer) and explain how the components within the hypodermis contribute to its function. • Describe the life cycle of a keratinocyte and explain what happens to the keratinocytes, including the process of keratinization, as they move from the deepest layer to the most superficial. • Describe the general structure and characteristics of the dermis, including the papillary and reticular layers, and its association with the epidermis. • Explain what cleavage lines are and how they are useful to surgeons. • Explain the basis of fingerprints. • Describe the pigments responsible for producing various skin colors and identify where in the skin these pigments would be found. • Explain the danger and benefit of sun exposure and describe how melanocytes protect us from damaging UV radiation.	• Lab Reports • Practice Worksheets • Discussions • Models • Simulations • Case Study Summary • Detailed Scientific Drawings • Quiz	**Career Ready Practices** CRP 1,2,4,7,8,11,12	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6
				Cluster Standards HL 1	**Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7
				Pathway Standards HL-HI 2,3	**Science** HS-LS1-6 HS-LS1-7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		• Differentiate among the three different types of skin cancer and identify the specific epidermal origin of each. • Briefly explain how the degree of a burn relates to the severity of the burn and the ability of the skin to heal. • Describe the events involved in epidermal wound healing and deep wound healing.			
Weeks 8-9 **Tissues: Bone**	• How does the skeletal system assist with protection in the body? • How does the structure of compact bone differ from the structure of spongy bone? • How does the overall structure of bone provide great strength and flexibility, but keep bone from being too bulky and heavy? • How can damage to a bone affect other human body systems? • What is bone remodeling? • How do osteoblasts and osteoclasts assist with bone remodeling and overall bone homeostasis? • What is the relationship between bone remodeling and blood calcium levels? • How do hormones assist in the maintenance of healthy bone and the release of calcium to be used in other body processes? • What are the four main stages of healing that occur after a bone fracture? • What role do joints play in the human body? • How are joints classified by both structure and function? • What are the different types of synovial joints?	• Describe the functions of the skeletal system. • Describe the differences and similarities among cellular and extracellular components of osseous tissue. • Distinguish between compact and spongy bone. • Differentiate among the different types of bone cells in terms of their origin and development, characteristic features, function, general location and contribution to the growth and maintenance of the bone. • Describe the general features of a long bone, focusing more specifically on the area of longitudinal growth. • Compare and contrast endochondral and intramembranous ossification. • Describe how bones grow in length and in width. • Explain the process of bone remodeling and fracture repair. • Describe how nutrition, hormones and weight-bearing exercise affect bone growth and remodeling. • Describe how calcium balance is maintained and why calcium homeostasis is physiologically important to the skeleton. • Differentiate among the major categories of joints based on degree of movement and/or structure and explain how structure correlates with function. • Select a clinically important synovial joint and describe the organization, accessory structures, and function of that joint.	• Lab Reports • Practice Worksheets • Discussions • Detailed Scientific Drawings • Models • Simulations • Case Study Summary • Quiz	**Career Ready Practices** CRP 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2
Weeks 10-11 **Tissues: Muscles**	• How do muscles assist with movement of the body and of substances around the body?	• Identify and describe the key components of the connective tissue framework of muscle and tendons. • Identify all the major anatomical features of muscle cells/fibers and describe how	• Lab Reports • Practice Worksheets • Discussions • Models	**Career Ready Practices** CRP 1,2,4,7,8,11,12	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5,6,7 11-12SL 1,4 11-12L 1,2,3,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• How are muscle fibers and membranes organized to form a whole skeletal muscle? • What do skeletal muscle structure and attachment to bones convey about function? • What are the requirements for muscle contraction? • How is the condition rigor mortis related to muscle contraction? • What role do calcium and ATP play in muscle contraction? • What is a sarcomere? • How does a sarcomere contract and lengthen to cause muscle contraction? • How do nerves interact with muscles? • How can we assess muscle function? • How does the body maintain a supply of ATP during exercise? • What is muscle fatigue? • How do the structure and function of the three types of muscle tissue compare? • How are muscles named?	each of these components function uniquely in driving excitation-contraction coupling. • Identify the key band, zone, and protein components of the sarcomere and explain how each function and change as part of the contraction cycle. • Describe all key components and steps in excitation-contraction coupling of muscle cells starting from a motor neuron and proceeding through the contraction cycle of actin and myosin. • Describe mechanisms in muscle fibers that regulate the duration and tension of the contraction and how relaxation and rigor mortis of muscles and muscle fibers occurs. • Explain how muscle cells and muscles as a whole regulate tension produced. • List the major energy sources for muscle fibers and how each source functions to provide ATP for contraction during various levels of activity. • Explain the key aspects of muscle metabolism including anaerobic metabolism and the implications of lactic acid production, as well as the metabolic processes that occur to drive aerobic muscle metabolism and muscle fiber recovery. • Describe the effects of fast twitch and slow twitch muscle fiber type, as well as training on muscle performance, including tension/force and endurance aspects. • Compare and contrast the key anatomical and functional differences between cardiac, smooth, and skeletal muscle and list major organs comprised on these various muscle types. • Identify the names and associated actions of muscles in both human and cat specimens, including the origins and insertions of these muscles.	• Student Drawings • Simulations • Case Study Analysis • Research Report • Unit Test	**Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2
Weeks 1213 **Respiratory System**	• Why do we need oxygen? • What is the purpose of breathing and how does it occur? • How do muscles assist in the movement of air in and out of the respiratory system?	• Describe the major functions of the respiratory system and protective features against pathogens, particles, and other hazards. • Differentiate between external and internal respiration.	• Lab Reports • Practice Worksheets • Discussions • Models • Simulations	**Career Ready Practices** CRP 1,2,4,7,8,11,12 **Cluster Standards**	**ELA** 11-12R 1,4 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• How does the oxygen we inhale move to cells? • How does diffusion facilitate gas exchange? • What changes in the respiratory system contribute to asthma? • Why is it valuable to measure lung capacity? • Why might some people be more efficient at capturing oxygen than others? • How does the respiratory system help regulate blood pH and CO_2 levels? • How is respiration rate regulated and what influences this rate?	• Describe the basic organization of the respiratory system, identify the organs and structures including tissue composition from the nasal cavity to the alveoli and their associated functions. • Identify the structure of the larynx and describe its role in breathing and sound production. • Identify the gross structure of the lungs and pleurae and describe the importance of this structure in pulmonary ventilation. • Explain how gas exchange occurs at the respiratory membrane and how its structure relates to function. • Summarize the mechanisms governing movement of air into and out of the lungs and how Boyle's law relates to the sequence of events. • Identify the muscles responsible for respiratory movements and how these muscles contribute to inspiration or expiration. • Describe the various lung volumes and how they relate to lung capacities. • Describe Dalton's and Henry's Laws and how these laws are related to respiratory gas exchange. • Identify mechanisms of gas exchange in the lungs and the tissues including O_2 and CO_2 concentration gradients and net gas exchange. • Describe the structure and function of hemoglobin, and the transport of oxygen and carbon dioxide in the blood. • Describe how oxygen is transported in the blood, and explain how factors such as temperature, pH, BPG and pCO_2 affect oxygen loading and unloading. • Describe carbon dioxide transport in the blood including the three forms of delivery and the influence of CO_2 on blood pH. • Explain the factors that influence rate and depth of breathing; locate the respiratory centers involved in the regulation of respiration and describe their roles in breathing control.	• Case Study of Respiratory Disorder • Quiz	HL 1 **Pathway Standards** HL-HI 2,3	RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2 HS-LS1-3
Weeks 14-15 **Urinary System**	• What are the functions of the urinary system?	• Describe the general functions of the urinary system.	• Lab Reports • Practice Worksheets	**Career Ready Practices** CRP 1,2,4,7,8,11,12	**ELA** 11-12R 1,4 11-12W 1,2,4,5

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
	• What are the major organs of the urinary system? • What is the general structure of the kidney and how does this structure relate to kidney function? • How does the kidney form urine? • What is the function of the nephron? • What is the relationship between blood and urine? • How do filtration, secretion and reabsorption in the nephron help maintain a fluid and electrolyte balance in the body? • How do the hormones ADH and aldosterone affect the nephron and the body's overall water balance? • What components are found in normal urine? • How do reflexes and voluntary muscle control work together to regulate release of urine from the body?	• Identify anatomical structures of the urinary system and their histological characteristics, including: internal and external structures of the kidney, vasculature of the kidney, ureters, urinary bladder, and urethra. • Identify regions of the nephron and the surrounding capillaries. • Define filtration, reabsorption, and secretion with reference to urine production. • Describe the process of glomerular filtration, including how filtration pressure is calculated. • Explain the regulation of glomerular filtration rate by local, neural, and hormonal mechanisms. • Identify substances that are reabsorbed and/or secreted in the nephron, including the mechanism and location, such as: Na^+, K^+, Cl^-, glucose, H^+, and H_2O. • Describe the hormonal regulation of the reabsorption of Na^+ and water in the nephron. • Differentiate between obligatory and facultative water reabsorption. • Explain the role of the kidneys in the maintenance of acid/base balance. • Describe the normal composition of urine. • Describe the events that occur during the micturition reflex.	• Discussions • Simulations • Case Study Analysis • Unit Test		11-12SL 1,4 11-12L 1,2,3,6
				Cluster Standards HL 1	**Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7
				Pathway Standards HL-HI 2,3	**Science** HS-LS1-2 HS-LS1-7
Weeks 16-20 **Professional Skills**	• What is the purpose of a professional portfolio? • How can keeping a professional portfolio benefit you in your future studies and career? • What careers interest you the most and why? • What experiences can help you best prepare for college admissions and employment opportunities?	• Write a professional resume appropriate for college admissions and job applications. • Create a professional portfolio that demonstrates mastery of program content, creativity, professionalism, and experience within their chosen field. • Complete an independent research project on a medical topic of their choice and encompasses multiple investigative skills and content from the program. • Complete an internship, mentorship, or shadowing experience with at least one professional in the field of their choice. • Identify and investigate potential career options through college visits and field trips to local businesses.	• Portfolio • Peer Assessment • Supervisor Formal Evaluations • Practical Exam • Lab Report • Discussions • Student Reflections	**Career Ready Practices** CRP 1,2,4,7,8,9,10,11,12	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12SL 1,2,3,4 11-12L 1,2,3,6
				Cluster Standards HL 1	**Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7
				Pathway Standards HL-HI 2,3	**Science**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		• Participate in mock interviews to prepare for college admissions and job interviews.			
Week 21 **Central Nervous System: Electrophysiology and Neurons**	• What are the major structures and functions of the nervous system? • How does the structure of a neuron relate to its function? • How do different types of neurons work together to coordinate bodily functions? • What role do passive and active transport play in the function of a neuron? • What are the steps of an action potential? • What is a synapse and how are chemicals used to transmit messages at the synapse? • What can occur as a result of neuronal malfunctions?	• Describe the structural and functional subdivisions of the nervous system including sensory/afferent, motor/efferent, interneurons, somatic, visceral/autonomic, central, and peripheral nervous systems. • Identify the key structural features of the neuron and describe their specific functions. • Describe the differences in anatomy, location, and function of unipolar, multipolar, and bipolar neurons. • Describe the anatomy of synapses including the structure and roles of the pre- and post-synaptic cells. • Describe the structure, function, and location of neuroglial cells of both central and peripheral nervous systems. • Review the key roles of transmembrane channel and carrier proteins in determining and maintaining transmembrane potential, as well as rapid changes in the resting membrane potential (action potentials). • Compare and contrast graded versus action potentials and where and how these changes in transmembrane potentials occur on neurons. • Describe the various phases of the action potential (including the relative and absolute refractory periods) and associated key structural components of the neuron that contribute to the changes in membrane potential for each phase. • Define and differentiate between depolarization and hyperpolarization, as related to membrane potential and the types of ions channels and ion diffusions that contribute to these potential changes. • Describe the structural and functional differences between continuous and salutatory propagation of action potentials. • Distinguish between Type A, B, and C neuron fibers both structurally and functionally based on the type of sensory or motor information transmitted by each. • Describe the key roles of neurotransmitters at the synapse and be	• Lab Reports • Practice Worksheets • Discussions • Graphic Organizer • Simulations • Case Study Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2 HS-LS1-3

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		able to provide examples of excitatory and inhibitory neurotransmitters. • Describe the key components and events involved in transmission of action potentials across a cholinergic synapse. • Explain the difference between excitatory and inhibitory post-synaptic potentials (EPSPs and IPSPs) and how temporal and spatial summation, relate to these concepts and information processing. • Identify various disorders caused by neuronal malfunctions. • Describe the causes, symptoms and treatments of specific neuronal disorders as presented through case studies.			
Week 22 **Central Nervous System: Spinal Cord and Reflexes**	• How does the structure of the spinal cord affect its function? • How are different types of neurons used to bring messages to and from the spinal cord? • What is a reflex and how do they work? • How are different types of neural circuit pathways used to facilitate electrical communication in the body?	• Identify and describe the key structural and functional attributes of the spinal cord including cross sectional anatomy, spinal nerves and nerve plexuses, spinal nerve roots, and the spinal meninges. • Describe the general organization of the gray and white matter of the spinal cord including sensory and motor nuclei, ascending and descending columns and tracts, and commissures. • Describe the key anatomy and function of sensory and motor pathways to and from the spinal cord using spinal nerves including both somatic and visceral modalities. • Compare and contrast the structural and functional differences between somatic, visceral, motor, and sensory neurons. • Explain the physiology and clinical relevance of sensory dermatomes. • Discuss and differentiate between the following types of reflexes: innate and acquired, monosynaptic and polysynaptic, somatic, and visceral, spinal, and cranial. • Describe the components and events involved in the reflex arc including stretch, withdrawal, and crossed-extensor reflexes. • Describe the following neural circuit pathways: divergence, convergence, reverberation, serial and parallel processing. • Identify the possible causes and effects of ineffective reflexes as presented through case studies.	• Lab Reports • 3-D Models • Practice Worksheets • Graphic Organizer • Simulations • Case Study Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-3

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Week 23: **Central Nervous System: The Brain**	• What are the locations and functions of the major regions of the brain? • What is CSF and how does it contribute to the function of the nervous system? • What is the blood-brain barrier and why is it important? • How does the limbic system help regulate emotions and learning? • How are basal nuclei used to relay information to and from other parts of the brain? • What are consequences of miscommunication in the body? • How do scientists determine which areas of the brain are associated with specific actions, emotions, or functions? • How are cranial nerves used to control specific regions in the body?	• Identify and describe the key structural and functional features of medulla oblongata, pons, thalamus and hypothalamus, mesencephalon, cerebellum, and cerebrum. • Identify and describe the locations of the cranial meninges and their functions for the brain and CNS. • Identify and describe the development and function of all the ventricles of the brain and the associated structures that play a role in the formation, circulation, and reabsorption of cerebrospinal fluid (CSF). • Describe the key functions of cerebrospinal fluid and how the Blood – CSF barrier is maintained. • Describe the key structural components of the Blood Brain Barrier and the associated physiological implications of these specialized capillaries in the brain. • Explain the roles of the limbic system and describe key portions of the brain involved in this system along with their specific functions in emotions and learning. • Describe the components and key functions of the basal nuclei in the cerebrum. • Describe the key structural and functional features of the cerebral cortex including the concepts of hemispheric lateralization and disconnection syndrome. • Identify and describe the functions of the various nerve fiber tracts in the cerebral white matter. • Identify and describe functions and locations of the primary motor and sensory cortices, cortical association, and integrative areas (including Wernicke's and Broca's areas and the premotor cortex). • Describe the anatomical and physiological concepts of the cortical homunculus in terms of both sensory and motor functions. • Describe how electroencephalograms are generated and the various types of brain waves observed.	• Lab Reports • Practice Worksheets • Discussions • Models • Case Study Analysis • Unit Test	**Career Ready Practices** 1,2,4,7,8,11 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		• Describe the physiology of seizures and explain the concept and implications of epilepsy. • Identify the cranial nerves on pictures or models of the brain and be able to describe key sensory and/or motor functions of these nerves. • Describe the causes, symptoms, and treatments of at least two brain disorders as presented through case studies.			
Weeks 24-25 **Peripheral Nervous System: Sensory Pathways - Somatic Nervous System**	• What role does the thalamus serve in processing neuronal information? • How are different types of receptors used for sensory input? • What is the difference between somatic and visceral sensory information? • How does the nervous system control skeletal muscle movement? • What structures are used to maintain balance and motor control?	• Describe the role of the thalamus in transmission and sorting of sensory information along with the related concepts of 1st, 2nd, and 3rd order neurons in the processing of somatic sensory information. • Explain the concepts of sensory receptor specificity, receptive fields, and transduction of sensory information in the form of graded and action potentials along neurons. • Compare and contrast nociceptors, thermoreceptors, chemoreceptors, and mechanoreceptors. • Distinguish between somatic and visceral sensory information. • Identify and describe sensory information carried by the posterior column and spinothalamic pathways, along with the concepts of 2nd order neurons and decussation of the information to the cortex. • Identify and describe how motor information to skeletal muscle is initiated and directed through upper and lower motor neurons through the motor cortex, pyramids, and corticospinal tracts. • Describe the roles of the basal nuclei, cerebellum, and vestibulospinal tracts in sensory perception and associated motor control. • Analyze a research paper investigating the somatic nervous system and state its hypothesis, summarize the data, and discuss the researcher's conclusion. • Recommend modifications or further follow up studies to a currently published research article.	• Lab Reports • Practice Worksheets • Discussions • Student Created Diagrams • Models • Research Article Summary/Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-3
Week 26			• Lab Reports	**Career Ready Practices** 1,2,4,7,8,11	**ELA** 11-12R 1,4,7

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
Peripheral Nervous System: Autonomic Nervous System	• How are ganglionic neurons used to facilitate electrical communication in the sympathetic and parasympathetic nervous systems? • What are visceral motor nuclei and how are they used in the nervous system? • How do the structure and function differ between the sympathetic and parasympathetic nervous systems? • How is the nervous system used to maintain regulatory cycles within the human body?	• Identify and describe the location and function of pre- and post-ganglionic neurons in the sympathetic and parasympathetic nervous systems. • Explain the concepts of visceral motor nuclei in both divisions of the autonomic nervous system and compare/contrast their anatomical locations. • Describe the key structural components and functions of the sympathetic nervous system. • Identify and describe the functions of the three types of ganglia in the sympathetic nervous system including sympathetic chain, collateral, and suprarenal medullae. • List and describe functions for the alpha and beta receptors of the sympathetic nervous system. • Describe the key structural components and functions of the parasympathetic nervous system. • Identify and describe the functions of the terminal and intramural ganglia in the parasympathetic nervous system. • Describe the concepts and associated components involved in autonomic tone, sleeping, and memory. • Analyze a research paper investigating the somatic nervous system and state its hypothesis, summarize the data, and discuss the researcher's conclusion. • Recommend modifications or further follow up studies to a currently published research article.	• Practice Worksheets • Discussions • Models • Simulations • Research Paper Summary/Analysis • Quiz		11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6
				Cluster Standards HL 1	**Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7
				Pathway Standards HL-HI 2,3	**Science** HS-LS1-3
Week 27 **Endocrine System**	• What is a hormone? • How do hormones interact with target cells? • What are examples of endocrine glands and exocrine glands in the human body? • How do feedback loops help regulate the action of hormones? • How can too little or too much of a hormone lead to disease?	• Identify the major endocrine organs on models and/or diagrams. • Describe the primary means of intercellular communication in the body. • Describe the various locations and functions of hormone receptors in target organs and tissues. • Differentiate between lipid-soluble and water-soluble hormones in terms of transport, receptor location and mechanism of action. • Describe typical endocrine reflexes and feedback loops.	• Lab Reports • Practice Worksheets • Discussions • Simulations • Case Study Summary • Unit Test	**Career Ready Practices** 1,2,4,7,8,11	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6
				Cluster Standards HL 1	**Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7
				Pathway Standards HL-HI 2,3	**Science** HS-LS1-2 HS-LS1-3

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		• Explain the regulatory role of the hypothalamus in the endocrine system, including the hormones it produces and their effects. • For each of the following endocrine organs, list the primary hormones produced: pituitary gland, pineal gland, thyroid gland, parathyroid glands, adrenal glands, pancreas. • Identify organs that have secondary endocrine functions and list the hormones they produce. • Describe the structure of key hormones, the means of transport, the mechanism of action at target organs/tissues, and the reason for its release/production. • Describe the stages of the general adaptation syndrome (stress response). • Diagnose an endocrine system disorder and explain the cause of this disorder. • Recommend a treatment plan for a specific endocrine system disorder using current medical research.			
Week 28 **Cardiovascular System: Blood**	• How does the structure of blood affect its function? • Why is the shape of a RBC critical for proper function? • What can occur if a RBC does not have the correct shape? • How is blood type determined? • What is a platelet and why are they important? • How does the body prevent blood loss after an injury? • What types of cells are found in blood and what are the functions of each?	• Describe the composition of blood and differentiate between formed elements and plasma. • Identify the key functions and physical characteristics of blood and the components of blood. • Describe the structure of RBCs and explain why RBC structure is optimal for its function. • Describe the basic process of erythropoiesis, the significance of the reticulocyte, and the effect of erythropoietin in the regulation of erythropoiesis. • Discuss the structure and function of hemoglobin. • Describe how specific RBC components are recycled. • Explain the basis for ABO blood types and the Rh factor system and discuss the importance of blood typing in blood transfusions. • Distinguish among the different types of white blood cell types in terms of structure, function, and origin.	• Lab Reports • Practice Worksheets • Discussions • Models • Simulations • Case Study Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		• Describe the structure, function, and production of platelets. • Describe the specific events that take place in each phase of hemostasis. • Describe the events involved in the formation of a fibrin clot and differentiate between the extrinsic, intrinsic, and common pathway. • Explain how positive feedback loops promote coagulation. • Describe the process of fibrinolysis and explain why it is necessary. • Identify blood disorders in a given case study. • Diagnose sickle cell anemia and describe its causes and appropriate treatment using current medical research.			
Week 29 **Cardiovascular System: The Heart**	• How does the structure of the heart contribute to its function? • What role do coronary arteries serve in terms of heart function? • What role do valves serve in the heart? • How do the structure and functions of the different chambers of the heart differ? • How do medical professionals analyze heart function? • How do the nervous system, muscular system and circulatory system work together to ensure blood moves continuously through the body?	• Identify the unique structural features of cardiac muscle cells/tissue and describe the associated functions of these features (intercalated discs, myoglobin, etc.) • Identify key gross anatomical features of the superficial heart including the great vessels, various sulci, and the major vessels of the coronary circulation. • Identify the names and associated functions of the three layers of the heart wall. • Identify other major anatomical components of the heart wall and explain their functional significance, including the layers of the pericardium, trabeculae carnae, chordae tendineae, and papillary muscles. • Identify landmark anatomical features of all four chambers of the heart and explain why each of the chambers look and function uniquely. • Trace the flow of blood through the pulmonary and systemic circuits of the body while listing the key vessels, chambers, and valves encountered through both circuits. • Describe the valve names and compare/contrast the anatomical and physiological differences in the operation of the atrioventricular versus the semilunar valves.	• Lab Reports • 3-D Models • Practice Worksheets • Graphic Organizer • Simulations • Case Study Summary • Unit Test	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		• Describe the key components of the cardiac conduction system and how each functions to initiate and regulate excitation and contraction of the various chambers of the heart. • Explain how the electrocardiogram (EKG) illustrates electrical activity of the cardiac conduction system and be able to attribute each part of the EKG tracing to conduction system components. • Explain the key pressure and volume changes associated with the cardiac cycle and attribute these changes to flow of blood and opening/closing of valves. • Explain various ways in which stroke volume and heart rate are regulated to adjust cardiac output to match level of activity. • Diagnose a heart attack using EKG images. • Recommend treatment plans for heart attack victims based on current medical research.			
Weeks 30-31 **Cardiovascular System: Blood Vessels and Regulation**	• What is the difference between pulmonary and systemic circulation? • What is the difference in structure and function between veins and arteries? • What role do veins, arteries, and capillaries serve in the circulatory system? • How is blood pressure maintained in the human body?	• Identify and list the structural differences between arteries, arterioles, capillaries, venules, and veins and describe how these differences explain their unique functional or physiological attributes. • Explain how blood flow, volume, and pressure are adjusted in the blood vessels, including how vasoconstriction and venoconstriction are controlled and their effects on these key variables. • Trace the flow of blood from the heart through major blood vessels and back to the heart and describe mechanisms that assist venous return of this blood as pressures decrease through the circuit. • Explain the pressures that drive capillary filtration and reabsorption, along with the function of lymphatic vessels in maintaining blood volume and preventing edema. • Explain the key cardiovascular reflexes operated neurally by the baroreceptors and chemoreceptors and hormonally by several important hormones. • Identify and describe the key anatomical features of the blood supply to various organs including the heart, lungs, liver,	• Lab Reports • Practice Worksheets • Discussions • Detailed Scientific Drawings • Models • Simulations • Case Study Summary • Unit Test	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-3

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		and brain, as well as the unique vessels and features of the fetal circulation. • Identify the major arteries and veins in both human and cat specimens. • Diagnose a patient with hypertension and explain the causes, and appropriate treatment using current medical research.			
Week 32 **Immune System**	• What body systems function to protect the human body? • How does the structure of the lymphatic system relate to its function? • What is an antigen? • What is an antibody? • How do circulating antibodies protect a person from receiving incompatible blood during a transfusion? • What is specific immunity? • What role do lymphocytes play in specific immunity? • How does the body react the second time it is exposed to a particular antigen?	• Describe both the components and major functions of the lymphatic system. • Describe the distribution and structure of lymphatic vessels and explain how lymph is transported. • Explain the basic structure, cellular populations, and function of lymphoid tissue (Lymph nodes). • Describe the structure and function of key lymphoid organs including the spleen and thymus. • Explain the importance of Mucosa-Associated Lymphoid Tissue including the tonsils and Peyer's patches. • Compare and contrast the key elements between the innate and adaptive immune defenses. • Describe the basic components and functions of the innate immune system including surface barriers, cells, and chemical defenses. • Describe the basic components and functions of the adaptive immune system including cell-mediated immunity and antibody-mediated immunity. • Explain what an antigen is and how it affects the adaptive response. • Identify the basic structure of an antibody monomer and name and describe the functions of the five classes of antibodies. • Explain T and B cell development and activation. • Explain humoral immunity including clonal selection of B cells. • List the various types of T cells, how they become activated and how they contribute to the cellular immune response. • Explain the basis of immunological memory and how it relates to vaccination. • Diagnose and describe appropriate treatment plans for patients with	• Lab Reports • Practice Worksheets • Discussions • Models • Student Drawings • Simulations • Case Study Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		autoimmune disorders through the use of case studies.			
Week 33-34 **Digestive System**	• What are the functions of the digestive system? • How does the structure of each organ in the digestive system relate to its function? • How does the digestive system assist in maintaining the water balance in the body? • How do enzymes assist the process of digestion?	• Describe the classes of nutrients required by the body. • Define the two types of digestive processes: mechanical and chemical. • Explain what is meant by absorption. • Identify the organs of the digestive system and describe their major functions. • Describe the histology of the digestive tract. • Describe the mechanisms that regulate digestion. • Explain muscular movements in the intestinal tract: peristalsis; segmentation • Describe the anatomy of the oral cavity and pharynx and explain their digestive functions. List the salivary glands and their secretions. Name the permanent teeth and explain the human dental formula. • Describe the anatomy and function of the esophagus. • Describe the anatomy and histology of the stomach. • Discuss digestive and absorptive processes in the stomach. • Explain the nervous and hormonal control mechanisms of gastric activity. • Describe the anatomy and histological organization of the small intestine. • Explain the functions of intestinal secretions and their regulation. • Describe the anatomy and functions of the accessory organs. • Explain nervous and hormonal controls acting on the small intestine. • Describe the absorptive processes of nutrients in the small intestine. • Describe the anatomy and histology of the large intestine. • Discuss the digestive and absorptive processes of the large intestine. • Explain the importance of the gut microbiome in digestion. • Describe the events of the defecation reflex. • Explain the current understanding of the “gut microbiome” and its importance to	• Lab Reports • Practice Worksheets • Discussions • Models • Simulations • Case Study Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		the digestive processes and influence on the physiology of other organ systems. • Diagnose and provide treatment plans for digestive system disorders through the use of case studies.			
Week 35 **Reproductive System**	• What are the functions of the male reproductive system? • What role does testosterone play in development and sexual reproduction? • What is the function of sperm? • How is sperm transferred to the female body during sexual reproduction? • What are the structures in the female reproductive system? • How does the structure of the female reproductive system allow for fertilization and development of a baby? • What role do hormones play in the female menstrual cycle? • How does the female menstrual cycle prepare the female body for pregnancy? • What role do feedback cycles play in menstrual cycle?	• Identify and describe the major organs, glands, and tissues of the male reproductive system. • Describe the major components of semen, including their functions and the glands producing them. • Identify the key components of a spermatozoan and describe their functions. • Explain the processes of spermatogenesis, including meiosis and spermiogenesis, along with the cells (including nurse, interstitial, spermatogonia, and spermatocytes) and associated hormones and locations. • Describe the major targets and effects of the reproductive hormones including GnRH, FSH, LH, and testosterone. • Identify and describe the major organs, glands, and tissues of the female reproductive system. • Explain the processes of oogenesis, including meiosis and follicle development, along with the cells (including follicular, oogonia, and oocytes) and associated hormones and locations. • Describe the key events, cells, organs, and hormones involved in the ovarian cycle, including the follicular phase, ovulation, and luteal phases. • Describe the key events, cells, organs, and hormones involved in the uterine cycle, including the menses, proliferative, and secretory phases. • Identify the anatomy and histology of the uterine wall including perimetrium, myometrium, and endometrium. • Explain the significance of the hormonal coordination of the uterine and ovarian cycles and its role in the success of oocyte fertilization and implantation. • Explain menopause and its implications. • Describe the role of reproductive therapy through the use of case studies.	• Lab Reports • Practice Worksheets • Discussions • Simulations • Case Study Summary • Student Debates • Unit Test	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science** HS-LS1-2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards	NYS Standards
		• Defend an opinion on the use of reproductive therapy techniques using specific evidence to support the claim.			
Weeks 36-40 **Professional Certifications**	• What is the difference between a lay responder and a professional rescuer? • What is the Good Samaritan law and how does it provide legal protection to lay responders? • What is a professional rescuer and why do they have a duty to act? • What are the legal concerns of treating a patient during a medical emergency? • What is the proper way to obtain consent to treat a victim? • What types of interventions can be done in specific medical emergencies? • What is the correct procedure to treat someone who is choking, not breathing or has no signs of life?	• Describe the Good Samaritan laws and the level of protection they provide to a lay rescuer • Define the "duty to act" and give examples of scenarios where this duty applies • Describe the process of obtaining consent to treat and explain when implied consent applies to a victim • Discuss the legal issues related to treating a victim both as a lay responder and a professional rescuer. • Demonstrate the ability to assess a victim and provide appropriate interventions • Give examples of when to use rescue breathing or CPR • Perform rescue breathing to infant, child, and adult victims • Perform correct CPR techniques at the professional rescuer level on an infant, child, and adult victim. • Demonstrate how to aid both a consciously choking and unconsciously choking victim.	• Portfolio • Peer Assessment • Supervisor Formal Evaluations • Practical Exams • Simulations • Students Demonstrations • Discussions • Student Reflections • Peer Review	**Career Ready Practices** 1,2,4,5,7,8,10,11,12 **Cluster Standards** HL 2,5 **Pathway Standards** HL-HI 2,3	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,2,3,4 11-12L 1,2,3,6 **Literacy** RST 1,2,4,7,8,9 WHST 2,4,5,6,7 **Science**