Syracuse City School District
Career and Technical Education Program
Summary
Health Professions

Program Overview

The Health Professions Program provides a preparatory pathway for students desiring to enter a variety of health careers, including nursing, physical therapy, radiation therapy, respiratory therapy, physician's assistant, and many others. The learning environment is designed to prepare students for the rigors of the dynamic health care profession. Instruction will introduce students to infection control, medical terminology, anatomy and physiology, the structure and function of body systems. the study of diseases and the disease process. Students will also examine technology in healthcare, medical ethics and jurisprudence, standards of professional conduct, patient communication, and the fundamentals of patient care.

Work-Based Learning

Students will be connected with professionals in the health professions field. These professional connections may include interviews, field trips to local businesses and facilities, virtual field trips to other locations, presenting their learning and work samples to professionals, job shadowing and career coaching. It is expected that these experiences will lead to opportunities for direct job training and real-world experience in an internship opportunity prior to completion of the program. Students will create and maintain a portfolio of their experiences to document the development of their skills, including a professional resume**.**

Additional Learning Opportunities

- Micro-credentials: Students may pursue learning experiences and credentials over the four years leading to certifications depending on the requirements of the project that they are involved in. Some examples for this pathway include, but are not limited to:
    - OSHA 10 Hour General Industry Certification
    - Provider First Aid
    - Stop the Bleed
    - Cardiopulmonary resuscitation (CPR)
    - Automated external defibrillator (AED)
    - Foreign body airway obstruction (FBAO)

Integrated Academics

TBD

Concurrent College Enrollment

Onondaga Community College: Medical Terminology, Communication, Anatomy and Physiology

Course Calendar

Level	Quarter	Units of Study
Level 1 Grade 9	1	• Introduction to Health Professions • Technical Reading and Writing • Effective Study Habits • Communication and Teamwork • Math Applications in Healthcare Note: The sequencing of the remaining quarters for level 100 will depend on the rotation among the faculty members.
	2	• Homeostasis • What is Diabetes? • Life with Diabetes • The Science of Food
	3	• Professionalism and Career Exploration • Professionalism and Communication • Infection Control • Heart Structure • The Heart at Work • Heart Dysfunction • Heart Intervention
	4	• Introduction to Clinical Laboratory Careers • Roles and Responsibilities of a Clinical Laboratory Technician • Personal and Professional Qualities of a Laboratory Technician • Professional Communication • The Microscope • Application of Lab Functions
Level 2 Grade 10	1	• Introduction to Level 200 (both groups) and Safety Protocols • *Note: Students focus on either Medical Terminology for 20 weeks or Health Systems and Care and then rotate. Therefore one sequence is weeks 2-20 and the other sequence is weeks 21-39. Weeks 1 and 40 are the same for both rotations. For purposes of brevity this curriculum will be written as a linear sequence of weeks 2-39 recognizing that students may experience the curriculum in different sequence*. • Patient Care and Communication
	2	• Consumer or Patient Rights • Insurance Systems • Emerging Issues and Impact on Health Care Systems • Opioids • Legal Responsibilities and Practices • Ethics • Wellness • Healthcare Across the Lifespan • Complementary and Alternative Health Practices
	3	• Introduction to Medical Terminology • Introduction to Pharmacology • Integumentary System • Digestive System • Respiratory System • Cardiovascular System • Hematologic System • Lymphatic and Immune System
	4	• Muscular System • Skeletal System • Urinary System • Female Reproductive System • Male Reproductive System • Endocrine System • Nervous System • Sensory Organs: Ear and Eye • Review and Exam Preparation • Career Exploration (both groups)

Level 3 Grade 11	1	• Introduction to Level 300 • Review of Safety Protocols and Procedures • Career Exploration: Preparation for Post-Secondary Opportunities (including Personal Finances) • Communication and Team Presentations *(Note: it is likely that this unit is incorporated throughout the year and embedded into the following units)* • Health Care Professions Teamwork (Career Exploration)
	2	• Information Technology in Healthcare • Mental and Behavioral Health • Infections and Public Education
	3	• Medical Documents • Organization of Human Body Systems • Chemistry: Introduction to Biochemistry • Cell Structure, Function and Physiology
	4	• Protein Synthesis • Cellular Reproduction • Review of Anatomy and Physiology • Communication about a Selected Human Body System • It is All Connected • Career Exploration, Employability and Reflection
Level 4 Grade 12	1	• Introduction to Level 400 • Career goals, Personal Safety, and Service Project/Internship Preparation • Integumentary System • Skeletal System • Muscular System • Respiratory System
	2	• Urinary System • Central Nervous System: Electrophysiology and Neurons • Professional Skills/Internship • Central Nervous System: Spinal Cord and Reflexes
	3	• Central Nervous System: The Brain • Peripheral Nervous System: Sensory Pathways - Somatic Nervous System • Peripheral Nervous System: Autonomic Nervous System • Endocrine System • Cardiovascular System: Blood • Cardiovascular System: The Heart • Cardiovascular System: Blood Vessels and Regulation
	4	• Immune System • Digestive System • Reproductive System • Professional Conduct and Certifications

Syracuse City School District
Career and Technical Education Program
Course Syllabus
HPP 100: Health Professions

Program Overview

The Health Professions Program provides a preparatory pathway for students desiring to enter a variety of health careers, including nursing, physical therapy, radiation therapy, respiratory therapy, physician's assistant, and many others. The learning environment is designed to prepare students for the rigors of the dynamic health care profession. Instruction will introduce students to infection control, medical terminology, anatomy and physiology, the structure and function of body systems. the study of diseases and the disease process. Students will also examine technology in healthcare, medical ethics and jurisprudence, standards of professional conduct, patient communication, and the fundamentals of patient care.

Course Description

This course introduces the biomedical sciences and health professions through hands-on projects and problems. Students will explore fundamentals of medical math, effective study skills, technical reading and writing and professional communication. This course is designed to provide an overview of all the courses in the Health Professions Program and lay the scientific foundation for subsequent courses. Students rotate among the three faculty members within Clinical Lab and Technology Pathway and Health Professions Pathway. Therefore, all students are exposed to weeks 1-10 and then students' sequence of content will vary depending on the rotation.

Work-Based Learning

Students will be connected with professionals in the health professions field. These professional connections may include interviews, field trips to local businesses and facilities, virtual field trips to other locations, presenting their learning and work samples to professionals, job shadowing and career coaching. It is expected that these experiences will lead to opportunities for direct job training and real-world experience in an internship opportunity prior to completion of the program. Students will create and maintain a portfolio of their experiences to document the development of their skills, including a professional resume.

Additional Learning Opportunities

- Micro-credentials: Students may pursue learning experiences and credentials over the four years leading to certifications depending on the requirements of the project that they are involved in. Some examples for this pathway include, but are not limited to:
  - OSHA 10 Hour General Industry Certification
  - Provider First Aid
  - Stop the Bleed
  - Cardiopulmonary resuscitation (CPR)
  - Automated external defibrillator (AED)
  - Foreign body airway obstruction (FBAO)

Pre-Requisites

NA

Course Objectives

Upon completion of the course students will:

- Identify varied roles, requirements, and expectations for careers in the healthcare industry
- Apply technical reading and writing to obtain, interprets and communicate information.
- Identify study habits and strategies to enhance individual understanding and retention of material.
- Demonstrate effective communication.
- Apply basic math skills
- Explain biological excepting including homeostasis, metabolism, impact of nutrition, and infection control
- Demonstrate competence with microscope study
- Apply engineering principles including the design process, feedback loops, and the relationship of structure to function within the circulatory system (heart and blood).

Integrated Academics

N/A

Concurrent College Enrollment

N/A

Equipment and Supplies

- **School will provide:** All necessary lab and classroom equipment.
- **Students will provide:** TBD

Textbook

N/A

Grading

30% In-Class Activities
30% Laboratory Experiments
40% Quizzes/Tests

Additional Course Policies

Attendance and Lateness

All rules regarding attendance and lateness will be followed according to the SCSD Code of Conduct. All absences will be counted as unexcused unless the school receives proper notification. Students must report to class on time or they will be marked late. If students have illegal absences or are late, they will receive a "0" for any assigned work, quizzes or tests missed during that period.

Make-up

It is the **student's** responsibility to make up any work missed due to an excused absence within 5 days of returning to school. This includes absences in which the student was not in school as well as missing a class due to participation in a sport, extracurricular activity and attending class trips or any other school event.

Time will be given in class to complete the activities and projects but any assignments not completed in class **must** be completed for homework. The items that are due for each assignment will be specified by the teacher during the lesson and posted on the board. It is the student's responsibility to complete and hand in assignments on time. Some activities and projects will be completed in groups and each person is responsible for taking notes and answering all conclusion questions. All assignments must be handed in when they are due. Failure to do so can result in a reduced grade or a zero for that assignment.

Quizzes and tests will be given throughout the course. The material covered on each test will based on the essential questions, vocabulary and content covered in each activity.

Lab Activity

If a student misses a class lab activity that cannot be made up during class time, an alternate or modified assignment may be given. In some cases, students will have to use classroom equipment to complete makeup assignments which will require that they come in after regular school hours. It is important that the makeup work is completed as soon as possible to keep up with the class material.

PLEASE NOTE: Not all lab activities can be made up. Some labs require extensive and complicated teacher preparation and some solutions and materials cannot be recreated.

Course Calendar

Note: Yellow highlight indicates new content or significantly changed from previous version. Green highlight indicates unit relocated from level 200 to level 100.

Quarter	Units of Study
1	• Introduction to Health Professions • Technical Reading and Writing • Effective Study Habits • Communication and Teamwork • Math Applications in Healthcare Note: The sequencing of the remaining quarters will depend on the rotation among the faculty members.
2	• Homeostasis • What is Diabetes? • Life with Diabetes • The Science of Food
3	• Professionalism and Career Exploration • Professionalism and Communication • Infection Control • Heart Structure • The Heart at Work • Heart Dysfunction • Heart Intervention
4	• Introduction to Clinical Laboratory Careers • Roles and Responsibilities of a Clinical Laboratory Technician • Personal and Professional Qualities of a Laboratory Technician • Professional Communication • The Microscope • Application of Lab Functions

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
HPP 100: Health Professions 100

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
Week 1 Introduction to Health Professions	• What are the expectations for students in this course? • How is safety maintained in a class and laboratory setting? • What are health professions? • What makes a presentation informative and engaging? • What are personal learning goals?	• Develop classroom and laboratory rules and establish relationships. • Articulate how to maintain safety in both a classroom and laboratory setting. • Define health professions and provide examples of professions and working environments. • Identify key skills and traits required within these professions. • Demonstrate how to organize information gathered to communicate information clearly and concisely. • Demonstrate sharing information gathered in small or large group presentations. • Identify personal goals for long-term career and short-term learning.	• Classroom Assignments • Class Presentations • Personal Learning Portfolio • Career Journal Note: Career exploration regarding potential careers in healthcare industry will continue on a regular basis all year, incorporated into additional units.	**Career Ready Practices** CRP 1,4,10 **Cluster Standards** **Pathway Standards** **National Health Science Standards** Standard 4: Employability Skills 4.1 Standard 7: Safety Practices 7.2	**ELA** 9-10 R 1,2 9-10 W 2,5,6 9-10 SL 1,4,5,6 9-10 L 1,2,3,4,6 **Literacy** 9-10 WHST 2,5,6,7 **Science** **Math**
Weeks 2-3 **Technical Reading and Writing**	• How are technical readings organized? • What are textural structures to guide the readers' understanding? • What strategies can be employed to assist readers' understanding of material? • How is material summarized? • How can material be concisely annotated? • How is determination made between accurate and objective information? • How do strategies such as note-taking, outlining, asking questions assist in	• Explain how technical readings may be organized differently than student experiences with readings such as a novel/short story. • Identify textual structures. • Identify varied strategies to promote reader's understanding of complex material. • Demonstrate concise summarization and annotation of technical text. • Explain the difference between subjective and objective information and how to determine accuracy of source. • Demonstrate application of strategies to promote reader's understanding. • Explain how specific strategies may assist in understanding and when to apply specific strategies.	• Class Assignments • Student Writing • Case Studies of Basic Medical Records • Student Debate/Class Participation	**Career Ready Practices** CRP 1,2,4 **Cluster Standards** HL 5 **Pathway Standards** HL-HI 2 **National Health Science Standards** Standard 2: Communication 2.1,2.3 Standard 5: Legal Responsibilities 5.2	**ELA** 9-10 R 1,2,3,4,5,6,8, 9-10 W 2,5, 9-10 SL 1,2,3,4,6 9-10 L 1,2,3,4,6 **Literacy** 9-10 RST 1,2,3,4,5,6,8, 9-10 WHST 2 **Science** **Math**

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	a readers' understanding? • How does a reader determine the meaning of an unknown word or term? • How is technical writing different from narrative writing? • Why is word choice and precise language important? • How does organization of writing assist the reader's understanding? • What are medical records? • What guidelines are in place to protect a patient's privacy? • Why is confidentiality of patient information important? • Who should keep patient information confidential? • Is there ever a time when patient confidentiality should be broken?	• Identify means to determine the meaning of an unknown word or term. • Demonstrate application of strategies to determine meaning of an unknown word or term • Compare and contrast technical writing and narrative writing. • Explain why word choice and precise language is important in technical writing. • Demonstrate specific word choice and precise language in technical writing. • Explain how introduction, organization, connections, and conclusions guide a reader's understanding. • Demonstrate efficient and effective organization in writing. • Define and give examples of medical records. • Apply technical reading and writing to interpret and create basic medical records. • Explain the importance of confidentiality when dealing with patients, and describe the major patient protections written into the Health Insurance Portability and Accountability Act (HIPAA). • Analyze patient confidentiality scenarios.			
Weeks 4-5 **Effective Study Habits**	• What do successful students do to assist in learning material? • What is executive function? • How does executive function impact memory? • What is the difference between short- and long-term memory? • How do people process and retain information (styles)?	• What habits of learning and study do successful students typically display? • Define executive function • Explain the role between executive function and memory. • Compare and contrast short- and long-term memory. • Identity modalities that people use to process and retain information. • Determine what modalities are of primary use for each individual. • Identify study strategies to boost memorization of material.	• Class Assignments • Self-Assessment • Journal	**Career Ready Practices** CRP 1,2,4,10 **Cluster Standards** **Pathway Standards** **National Health Science Standards**	**ELA** 9-10 R 2 9-10 W 2 **Literacy** 9-10 RST 2,5 9-10 WHST 2 **Science** **Math**

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	• What are some strategies to commit material to memory? • What study strategies best work for individual students?	• Identify study habits and strategies that enhance individual understanding and retention of material.			
Weeks 6-7 **Communication and Teamwork**	• What makes communication effective? • What makes a good listener? • When and how might communication need to be adapted? • What is emotional intelligence? • How does empathy, compassion support effective communication? • What is the importance of body language? • What makes a good team member? • What makes a good team leader? • What helps a team to function productively? • How can conflict be resolved?	• Identify aspects of effective communication. • Identify aspects of an engaged listener. • Identify environments and situations where communication may need to be adapted. • Explain what emotional intelligence is and how understanding emotional intelligence supports communication. • Define empathy and compassion. • Demonstrate communication applying empathy and compassion. • Demonstrate interpretation of body language. • Demonstrate examples of effective speaking and listening. • Explain what traits and skills good team members exhibit. • Explain what traits and skills a good team leader exhibits. • Explain strategies and habits that effective teams exhibit. • Identify means to resolve conflict. • Demonstrate application of effective and productive team functioning.	• Class Assignments • Role-Plays • Self-Assessment • Journal	**Career Ready Practices** CRP 1,2,4,9,12 **Cluster Standards** HL 4 **Pathway Standards** **National Health Science Standards** Standard 2: Communication 2.1 Standard 8: Teamwork 8.2	**ELA** 9-10 R 2 9-10 W 2 9-10 SL 1,3,4,6 9-10 L 1,2,3 4,6 **Literacy** 9-10 RST 2 9-10 WHST 2 **Science** **Math**
Weeks 8-10 **Math Applications in Healthcare**	• How are units in the metric system interpreted? • How are common functions calculated? • How are functions calculated and interpreted for rational numbers?	• Identify metric prefixes and meaning. • Demonstrate conversion from English/Imperial to Metric systems and vis versa. • Demonstrate calculations with addition, subtraction, multiplication, and division of rational numbers. • Demonstrate calculation of average, ratios, percentages, and fractions.	• Class Assignments • Class Presentations • Quizzes/Tests	**Career Ready Practices** CRP 2 **Cluster Standards** **Pathway Standards** **National Health Science Standards** Standard 1: Academic Foundation 1.3	**ELA** 9-10 SL 1,4,5,6 **Literacy** 9-10 RST 7 **Science** **Math**

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	• What are common methods of measurement? • How is military time interpreted? • How can data be displayed visually?	• Explain the relationship among averages, ratios, percentages, and fractions. • Interpret the meaning of given averages, rations, percentages, and fractions. • Compare and contrast different ways to determine average. • Identify measurement terms (both English and metric) and corresponding values for height, weight, length, volume, temperature, household measurements. • Demonstrate conversation of military time to standard time. • Demonstrate analysis of visually displayed data in diagrams, charts, graphs, and tables.			
Weeks 11-13 **Homeostasis**	• What is homeostasis? • Why is homeostasis important to maintain a healthy and functioning body? • How does the human body maintain homeostasis? • How can individuals help maintain homeostasis?	• Define homeostasis. • Cite examples of homeostasis in the human body. • Explain the importance of homeostasis and what may occur if unbalanced systems are in place over time. • Analyze examples of homeostasis in different body systems. • Explain how one body system can impact a different body system. • Explain ways to reestablish homeostasis.	• Class Assignments • Quiz/Test	**Career Ready Practices** CRP 2,4	**ELA** 9-10 R 1,2 9-10 W 2 9-10 SL 1 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2
				Pathway Standards	**Science** HS-LS1-3
				National Health Science Standards Standard 1: Academic Foundation	**Math**
Weeks 14-15 **What is Diabetes?**	• What is diabetes? • How does the body regulate the level of blood glucose? • How is glucose tolerance testing used to diagnose diabetes? • How does the development of Type 1 and Type 2 diabetes relate to how the body	• Explain the role of insulin in the transfer of glucose into body cells. • Explain how blood glucose levels are regulated by the feedback action of the hormones insulin and glucagon. • Graph laboratory blood glucose and insulin level data and interpret results. • Compare Type 1 and Type 2 diabetes. • Demonstrate the role of insulin in transferring glucose from blood into cells.	• Class Assignments • Class Presentations • Quiz/Test	**Career Ready Practices** CRP 2,4,6,7,8,11	**ELA** 9-10R 1,2,8,9 9-10W 1,2,4,5,6,7 9-10 SL 1,4,5,6 9-10L 1,2,3a,6
				Cluster Standard HL 1	**Literacy** 9-10 RST 1,2,4,7,8,9 9-10 WHST 2,4,5,6,7
				Pathway Standard HL-DIA 5	**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 and National Health Science Standards	NYS Standards
	produces and uses insulin? • What is the relationship between insulin and glucose? • How does insulin assist with the movement of glucose into body cells? • What role does homeostasis play in diabetes? • What does feedback refer to in the human body?	• Diagram the feedback relationship of blood glucose and the hormones insulin and glucagon. • Evaluate web resources to determine their level of credibility.		**National Health Science Standards** Standard 1: Academic Foundation 1.2	**Math**
Weeks 16-17 **Life with Diabetes**	• What are several ways the life of someone with diabetes is impacted by the disorder? • What are potential short- and long-term complications of diabetes? • How do Type I and Type II diabetes differ? • What are the current treatments for Type I and Type II diabetes? • How do the terms hyperglycemia and hypoglycemia relate to diabetes? • What might happen to cells that are exposed to high concentrations of sugar? • What innovations are available to help diabetics manage and treat their disease? • What is the importance of checking blood sugar levels for a diabetic? • How can an insulin pump help a diabetic?	• Diagram complications of diabetes on a human body graphic organizer. • Compare Type 1 and Type 2 diabetes. • Demonstrate how water moves across a cell membrane to balance the level of dissolved solutes on either side. • List and describe the wide variety of treatment and management medical interventions that are available to diabetics. • Explain how the regulation of blood sugar helps to avoid severe and life-threatening diabetic emergencies. • Explain how to advise a patient newly diagnosed with diabetes on treating and living with the disease. • Assess the qualities of a successful oral and visual presentation.	• Patient Education Brochure/Websites • Case Studies • Practices Worksheets/ Class Assignments • Quiz/Test	**Career Ready Practices** CRP 2,4,5,6,7,8,11	**ELA** 9-10R 1,8 9-10W 2,4,5,6,7 9-10SL 1,2,3,4,5 9-10L 1,2,3a,6
				Cluster Standards HL 1	**Literacy** 9-10RST 1,2,4,7,8,9 9-10 WHST 2,4,5,6,7
				Pathway Standards HL-BRD 1,5	**Science** HS-LS1-3
				National Health Science Standards Standard 1: Academic Foundation 1.2	**Math**

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
Weeks 18-20 **The Science of Food**	• Why is what food is eaten important? What are the main nutrients found in food? • How can carbohydrates, lipids, and proteins be detected in foods? • What types of foods supply sugar, starch, proteins, and lipids? • How can food labels be used to evaluate dietary choices? • What role do basic nutrients play in the function of the human body? • What are basic recommendations for a diabetic diet? • What are the main structural components of carbohydrates, proteins, and lipids? • What is dehydration synthesis and hydrolysis? • How do dehydration synthesis and hydrolysis relate to harnessing energy from food? • How is the amount of energy in a food determined?	• Explain the importance of what is meant by good nutrition and why it is important for health. • Describe basic nutritional terms as well as identify the role of each nutrient in the body. • Describe which foods are high in carbohydrates, lipids, and proteins. • Analyze food labels and food choices for nutritional content. • Explain how the nutritional content of food helps individuals make decisions about diet and maintain good health. • Explain how the structure of macromolecules is related to their function in the human body. • Demonstrate the processes of dehydration synthesis and hydrolysis. • Explain the process of calorimetry and how it is used to measure the amount of energy in a food. • Perform calorimetric measurements on food items and interpret the results.	• Laboratory Reports • Modeling • Concept Maps/Class Assignments • Quiz/Test	**Career Ready Practices** CRP 2,3,4,7,8,11 **Cluster Standards** HL 1 **Pathway Standards** HL-BRD 2 HL-THR 3 **National Health Science Standards** Standard 9: Health Maintenance Practices 9.1	**ELA** 9-10R 1,2,4,8 9-10W 1,2,4,5,6,7 9-10L 1,2,3a,6 **Literacy** 9-10RST 1,2,4,7,8,9 9 -10WHST 2,4,5,6,7 **Science** HS-LS1-6 **Math**
Weeks 21-23 **Professionalism and Career Exploration** **Professionalism and Communication**	• What are examples of health professions? • What are the tasks and demands of a career of interest? • Why is prescribed dress or uniforms important? • What is the purpose of identification badges and	• Identify a wide range of health care professions. • Explain tasks, demands and responsibilities of a health profession. • Explain the importance of mandated types of footwear, dress, or uniforms. • Explain the importance and purpose of identification badges and protocols. • Identify benefits of a career in health professions (including salary, work-life	• Class assignments • Student research • Student interviews of professionals working in a health profession • Student presentations • Student reflection • Career Journal	**Career Ready Practices** CRP 2, 4, 10 **Cluster Standards** HL 4 **Pathway Standards** HL-DIA 1	**ELA** 9-10 R 1,2 9-10 W 2,6,7 9-10 SL 1,3,4,5,6 9-10 L 1,2,3,4,6 **Literacy** 9-10 RST 2 9-10 WHST 2,5,6 **Science**

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	other means of identification? ● What are the benefits of a career of interest? ● What are the educational and experiential requirements for a career of interest? ● What are working environments for a career of interest? ● What are examples of local, regional, and national employers for a career of interest? ● What makes an effective question? ● What can be learned from an interview? ● What are skills and traits that are beneficial in a career of interest? ● How can information be shared in a concise and engaging manner? ● What are some careers of personal interest? ● What makes effective verbal communication? ● What might be barriers to effective verbal communication? ● How might verbal communication be adapted according to audience or listener? ● What makes written communication effective? ● How is technical writing different from narrative writing? ● Why is accuracy important?	balance, general lifestyle, employment outlook). ● Summarize educational and experiential requirements for a health profession. ● Describe varied working environments for a career in health professions. ● Identify employers for health professions. ● Create effective and efficient questions to surface desired information. ● Demonstrate effective research techniques to answer research question. ● Demonstrate effective written and social media communications to request an interview (virtual or in person). ● Demonstrate conducting an interview to gain relevant information. ● Synthesize information from varied sources to answer research question. ● Demonstrate presentation of information in an effective and engaging manner. ● Identify skills and traits required in a career of interest. ● Identify some potential careers of interest. ● Identify aspects of effective verbal language both for speaker and listener. ● Demonstrate effective speaking and listening. ● Identify barriers to effective verbal communication. ● Demonstrate modification of verbal communication depending on situation and listener. ● Identify aspects of effective written communication. ● Compare and contrast technical and narrative writing.		HL-HI 1 **National Health Science Standards** Standard 2: Communications 2.1, 2.3 Standard 4: Employability Skills 4.1,4.2,4.3,	 **Math**

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	• How can social media be used to build a professional social presence? • How can social media detract from a professional social presence?	• Explain the importance of word choice, style, and mechanics to effectively and accurately express details. • Demonstrate technical writing that is clear, concise, and accurate. • Describe how social media can support a professional profile. • Describe how social media can detract from a professional profile. • Demonstrate professional use of social media presence.			
Weeks 24-26 **Infection Control**	• What is an infectious agent? • How has infection control evolved through the history of healthcare? • What is a chain of infection? • What steps and protocols are followed to prevent and contain infections? • How do professionals implement policies and procedures to protect themselves, patients, co-workers and community from infection and spread of pathogens? • What is the difference between bacterial and viral infection? • How is hazardous waste disposed? • How do community agencies work collaboratively to educate, prevent, and contain outbreaks of pathogen?	• Give examples of infectious agents. • Relate how infection control has changed and evolved. • Explain principles of infection transmission. • Identify classification of pathogens. • Describe characteristics of microorganisms. • Recognize chain of infection • Identify modes of transmission • Identify methods of controlling the spread of pathogens. • Demonstrate application of methods of disinfection and sterilization of equipment. • Demonstrate standards precautions such as handwashing, gloving, use of personal protective equipment and environmental cleaning. • Explain when and how isolation precautions may need to be in place. • Compare and contrast bacterial and viral infections. • How is hazardous waste disposed? • Identify national, state, and local community health agencies. • Explain the role and purpose of varied community health agencies. • Summarize how community-based agencies and government agencies interact to provide services to the community.	• Class Assignments • Quizzes • Student Demonstrations • Interviews and/or Research with Practitioners • Class Presentations	**Career Ready Practices** CRP 1,2,4,5 **Cluster Standards** HL 2,3 **Pathway Standards** HL-SUP 2 **National Health Science Standards** Standard 7: Safety Practices 7.1	**ELA** 9-10 R 2,4 9-10 W 2,5,6,7 9-10 SL 1,2,4,6 9-10 L 1,2,3,4,6 **Literacy** 9-10-RST 1,2 9-10 WHST 2 **Science** **Math**

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
Week 27 **Heart Structure**	• What are the structures that make up the human heart and how are they organized? • How do the heart and lungs work together to pick up and deliver oxygen to the cells? • What is the pathway that blood takes as it passes through the heart? • What is the function of valves in the heart? • How does the structure of arteries and veins relate to their functions?	• Identify the main structures of the heart and describe their functions. • Outline the path of the major blood vessels to and from the heart. • Explain how heart valves function to keep blood moving in the proper direction. • Explain how arteries move blood away from the heart and veins carry blood back to the heart. • Compare the structure and function of arteries and veins.	• Detailed Scientific Drawings • Class Assignments • Laboratory Reports • Career Journals • Quiz/Test	**Career Ready Practices** CRP 2 4 7 8 11	**ELA** 9-10R 1,4,8 9-10W 1,2,4 9-10L 1,2,3a,6
				Cluster Standards HL 1	**Literacy** 9-10RST 1,2,4,7,8,9 9-10 WHST 2,4,5,6,7
				Pathway Standards HL-DIA 5	**Science** HS-LS1-2
				National Health Science Standards Standard 1: Academic Foundation 1.2	**Math**
Week 28 **The Heart at Work**	• What factors can influence heart rate? • Why is it important to monitor the rate at which the heart beats? • What is blood pressure? • How do systolic and diastolic blood pressure values relate to the movement of blood in arteries? • What factors can influence blood pressure? • In what ways can technology be used to collect and analyze cardiovascular data? • What is an EKG? • How can an EKG be used in the diagnosis and treatment of heart disease?	• Explain that the heartbeat is caused by the contraction of muscle cells and results in the movement of blood from the heart to the arteries and the rest of the body. • Explain that heart rate is the number of heart contractions per unit of time, usually per minute. • Explain that blood pressure is a measure of the force put on the vascular walls by the blood as it is pushed by the cardiac muscles through the blood vessels. • Explain how the electrical activity of the heart can be measured and recorded by an electrocardiogram (EKG or ECG). • Analyze EKG readings and relate resultant data to heart function. • Describe how internal and external factors can affect heart function and can contribute to the development of heart disease. • Explain why all external variables in an experiment need to be controlled. • Design controlled experiments to test the effect of factors such as exercise	• Laboratory Reports • Class Assignments • Simulated Diagnostic Testing • Career Journal • Quiz/Test	**Career Ready Practices** CRP 2,4,7,8,11	**ELA** 9-10R 1,2,8 9-10W 1,2,4,5,6 9-10L 1,2,3a,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 1,2,4,7,8,9 9-10 WHST 2,4,5,6,7
				Pathway Standards HL-THR 3	**Science** HS-LS1-1 HS-LS1-2
				National Health Science Standards Standard 1: Academic Foundation 1.1 Standard 10: Technical Skills 10.1	**Math**

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
		or body position on heart rate and blood pressure. • Measure heart rate and blood pressure manually and with scientific software and probes.			
Week 29 **Heart Dysfunction**	• What is cholesterol? • What roles does cholesterol play in our cells and in the body? • What are LDL and HDL? • How are LDL, HDL, and cholesterol related to heart disease? • How do doctors interpret the results of a cholesterol test? • What is familial hypercholesterolemia and how is it inherited? • How does the heart work as a pump? • How can cholesterol plaques affect the overall function of the heart? • What is atherosclerosis? • How can techniques of molecular biology be used to analyze DNA for the presence of the FH mutation? • What lifestyle changes may help a patient obtain healthy cholesterol levels? • What are the pros and cons of using cholesterol lowering medications?	• Explain how cholesterol is transported in the blood by protein complexes called high density lipoprotein (HDL) and low-density lipoprotein (LDL). • Describe how cholesterol buildup can impact blood flow through arteries. • Compare and contrast the role of HDL and LDL in the body and how each relates to health. • Design a controlled experiment to demonstrate how cholesterol plaques impact flow rate in blood vessels. • Describe how restriction enzymes and gel electrophoresis can be used to analyze genetic information. • Use proper laboratory techniques to separate DNA fragments by gel electrophoresis. • Analyze the results of the gel electrophoresis to correctly diagnose the presence of the familial hypercholesterolemia mutation. • Generate ideas as a team to solve a problem.	• Patient Education Materials • Case Studies • Laboratory Reports • Practices Worksheets • Class Assignments • Quiz/Test	**Career Ready Practices** CRP 2,3,4,7,8,11 **Cluster Standards** HL 1 **Pathway Standards** HL-DIA 1,2 **National Health Science Standards** Standard 1: Academic Foundation 1.2 Standard 8: teamwork 8.1, 8.2	**ELA** 9-10R 1,2,4,8 9-10W 1,2,4,5,6 9-10SL 1,2,5 9-10L 1,2,3a,6 **Literacy** 9-10 RST 1,2,4,7,8,9 9-10 WHST 2,4,5,6,7 **Science** HS-LS1-3 HS-LS3-1 HS-LS3-2 HS-LS3-3 **Math**
Week 30 **Heart Intervention**	• What is heart disease? • What happens inside the heart to cause a heart attack? • How do doctors treat a blocked blood vessel?	• Describe the function of an angiogram in diagnosing blocked vessels. • Explain how blocked blood vessels can be treated surgically using procedures that tunnel through or around the areas that disrupt normal blood flow.	• Model • Patient Treatment Plan • Class Assignments • Quiz/Test	**Career Ready Practices** CRP 2,4,7,8,11 **Cluster Standards** HL 1	**ELA** 9-10R 1,8 9-10W 1,2,4,6 9-10SL 1,4 9-10L 1,2,3a,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 and National Health Science Standards	NYS Standards
	• What are risk factors for the development of heart disease? • What is metabolic syndrome? • How can a person decrease his or her risk of heart disease?	• Demonstrate a technique used to open a blocked vessel. • Analyze medical data and brainstorm causes of death linked to the cardiovascular system. • Explain how lifestyle changes as well as medication or medical treatment may help decrease heart disease risk. • Analyze heart disease risk and design a risk reduction program.			9-10 RST 1,2,4,7,8,9 9-10 WHST 2,4,5,6,7
				Pathway Standards HL-DIA 1,2,5	**Science** HS-LS1-1
				National Health Science Standards Standard 1: Academic Foundation 1.2	**Math**
Week 31-32 **Introduction to Clinical Laboratory Careers**	• What is laboratory technology? • What are the career pathways in the laboratory? • In what types of laboratories do laboratory technicians find employment? • What are the different roles in the organizational structure of the clinical laboratory? • How much education is needed to pursue various careers in the laboratory? • What types of license or certifications are required to gain employment in the laboratory? • What are local opportunities for post-secondary education? • What is the place for me in the laboratory?	• Define laboratory technology and the function of the laboratory. • List potential employers for clinical laboratory assistants in non-hospital laboratories. • Differentiate various job titles in the clinical laboratory using an organizational chart. • List the major departments in the clinical lab and name a common test. • Define various job titles in the clinical laboratory. • Match personality characteristics to possible career choices. • Explain how clinical labs are regulated. • Explain the purpose of proficiency testing. • Locate and identify local opportunities for post-secondary education/certification. • Explain how labs are credentialed. • Identify skills necessary for specific careers.	• About Me Template • Self Portrait Project-Rubric • Written Assessment on Definitions, Job Titles, and Departments in the Laboratory • Education and Salary Graph • Research Paper on Employment Outlook, Salaries, and Work Environment • Presentation on Various Career Pathways in the Laboratory • Laboratory Career Brochure • Career Matching Matrix • Online Assessment	**Career Ready Practices** CRP 2,6,7,10,11	**ELA** 9-10R 1,4,8 9-10W 2,4,5,6,7 9-10SL 1,4,5,6 9-10L 1,2,3,6
				Cluster Standards HL 1,2,4 ST 4	**Literacy** 9-10 RST 1,2,4 9-10 WHST 2,4,5,6,7
				Pathway Standards ST-SM 4	**Science**
				National Health Science Standards Standards 4: Employability Skills Standard 8: Teamwork	**Math**
Week 33 **Roles and Responsibilities of a Clinical Laboratory Technician**	• What are the tasks and roles of various laboratory personnel? • What are other allied health professionals in the laboratory?	• Describe the roles of clinical laboratory staff including education, professional credentials, and contributions to the clinical laboratory. • Describe several tasks performed by a laboratory technician. • Describe the scientific method.	• Quiz on Roles and Responsibilities of Laboratory Personnel • Guest Speaker Interview Questions • Scientific Methods Lab • Online Assessment	**Career Ready Practices** CRP 2,6,7,8,11	**ELA** 9-10R 1,2,4,8 9-10W 2,4 9-10SL 1,3 9-10L 1,2,3,6
				Cluster Standards HL 2,4 ST 4	**Literacy** 9-10 RST 1,2,4,7

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	• How does scientific reasoning apply in daily life?	• Explain how the scientific method is used to answer questions and solve problems in the laboratory. • Show how the scientific method is used to solve an investigation, including all the steps of the method and an experiment.			9-10 WHST 2,4,5,6,7
				Pathway Standards HL-DIA 5 ST-SM 4	**Science**
				National Health Science Standards Standards 4: Employability Skills Standard 8: Teamwork	**Math**
Week 34 **Personal and Professional Qualities of a Laboratory Technician**	• What are the personal qualities that are desirable in the laboratory? • What are the benefits of effective teamwork? • Why is being a team-player important in health care? • How can conflicts be resolved?	• List personal qualities that are desirable in a clinical laboratory professional. • Discuss the lab professional/patient relationship. • Demonstrate the standards of professional appearance as they apply to lab coats, shoes, hair, and jewelry. • Create a profile of a healthcare worker that includes personal and professional traits. • List the steps of conflict resolution. • Demonstrate how to resolve conflict.	• Diagram of a Professional Laboratory Technician • Teamwork Problem Solving Activity • Online Assessment	**Career Ready Practices** CRP 1,6,7,9,12	**ELA** 9-10R 1,2,4,8 9-10W 2,4 9-10SL 1 9-10L 1,2,3,6
				Cluster Standards HL 1,4 ST 4	**Literacy** 9-10 RST 1,2,4 9-10 WHST 2,5,6,7
				Pathway Standards HL-DIA 1 ST-SM 4	**Science**
				National Health Science Standards Standard 8: Teamwork	**Math**
Week 35 **Professional Communication**	• What are the basic concepts of communication? • How do I communicate professionally to serve the needs of my patients? • What are factors that interfere with communication? • Why is active listening important in healthcare? • How do I communicate with patients of different ages? • What is the importance of complete and accurate telephone or email/text messages?	• Identify different types of communication. • Practice verbal and nonverbal communication. • Engage in active listening. • Identify cultural differences and how to address them in healthcare. • Demonstrate ways population-specific care is applied while communicating with patients. • Demonstrate competency in relaying a complete and accurate telephone or electronic message.	• Clear Verbal Communication Exercise • Message Activity • Communication Chapter Activity • Communication Quiz • Online Assessment	**Career Ready Practices** CRP 1,4,9,12	**ELA** 9-10R 1,2,4 9-10W 2,4 9-10SL 1,3,4 9-10L 1,2,3,6
				Cluster Standards HL 1,4,6 ST 4	**Literacy** 9-10 RST 1,2,4 9-10 WHST 2,4
				Pathway Standards HL-DIA 1 ST-SM 4	**Science**
				National Health Science Standards Standard 2: Communication	**Math**
Weeks 36-37	• How is a microscope used?	• Identify the parts of a light microscope.	• Identify the parts of a light microscope.	**Career Ready Practices** CRP 2,8	**ELA** 9-10R 1,2,4

Time Frame Unit of study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
The Microscope	• What are all the parts of a light microscope? • How are cells examined under a microscope? • What parts of a cell can be viewed? • How is a microscope used to identify types of cells?	• Demonstrate the use of coarse and fine adjustments. • Utilize the low, high, and oil immersion objectives. • Adjust the condenser and iris diaphragm. • Demonstrate proper care and storage of a microscope. • Demonstrate correct techniques to examine a cell. • Demonstrate correct labeling of parts of a cell. • Identify types of cells using the microscope.	• Demonstrate the use of coarse and fine adjustments. • Utilize the low, high, and oil immersion objectives. • Adjust the condenser and iris diaphragm. • Demonstrate proper care and storage of a microscope.		9-10W 2,4 9-10L 1,2,3,6
				Cluster Standards HL 4 ST 3,5,6	**Literacy** 9-10 RST 1,2,4,7,9 9-10 WHST 2,4,5,6,7
				Pathway Standards HL-DIA 5 ST-SM 2,4	**Science** PS4.C
				National Health Science Standards	**Math**
Weeks 38-40 **Application of Lab Functions**	• What are the elements of blood? • What are the parts and related functions of blood? • What are the types of blood? • What are the implications of the different types of blood? • How is blood type identified? • What are common diseases related to blood?	• Name the elements of blood. • Identify parts of blood and related function. • Identify types of blood. • Explain implications of blood type. • Demonstrate blood typing. • Discuss common diseases of blood.	• Class Assignments • Lab Assignments • Quiz/Test	**Career Ready Practices** CRP 1,2	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 1,2 9-10 WHST 2
				Pathway Standards HL-BRD 4	**Science**
				National Health Science Standards Standard 1: Academic Foundation	**Math**

Syracuse City School District
Career and Technical Education Program
Course Syllabus
HPP 200: Health Professions

Program Overview

The Health Professions Program provides a preparatory pathway for students desiring to enter a variety of health careers, including nursing, physical therapy, radiation therapy, respiratory therapy, physician's assistant, and many others. The learning environment is designed to prepare students for the rigors of the dynamic health care profession. Instruction will introduce students to infection control, medical terminology, human growth and development, anatomy and physiology, the structure and function of body systems, the study of diseases and the disease process, technology in healthcare, medical ethics and jurisprudence, standards of professional conduct, patient communication, and the fundamentals of patient care.

Course Description

Level 200 focuses on systems as pertaining to providing healthcare and to human body organization. For half of the year, delivery of healthcare including basics of healthcare settings, insurance systems, and emerging issues impacting health care systems, legal and ethical practices, general wellness, and lifetime care are explored and researched. The other half of the year students will focus on medical terminology. Students will be proficient in naming directionality, and general human body systems. Students will recognize prefixes and suffixes and the impact on meaning as they learn to build words with associated meanings. Terms pertaining to each body system and an introduction to common diseases are examined. This is framed by the examination of body systems through medical terminology relating to location, structures, functions, and disease or injury. Human body organization from cells to systems are introduced.

Work-Based Learning

Students will be connected with professionals in the design field. These professional connections may include interviews, field trips to local businesses, virtual field trips to other locations, presenting their learning and work samples to professionals, advanced students, job shadowing and career coaching. It is expected that these experiences will lead to opportunities for direct job training and real-world experience in an internship opportunity prior to completion of the program. Students will create and maintain a portfolio of their experiences to document the development of their skills, including a professional resume.

Additional Learning Opportunities

- Micro-credentials: Students may pursue learning experiences and credentials depending on the requirements of the project that they are involved in. Some examples for this pathway include, but are not limited to:
  - OSHA 10 Hour General Industry Certification
  - Provider First Aid
  - Cardiopulmonary resuscitation (CPR)
  - Automated external defibrillator (AED)
  - Foreign body airway obstruction (FBAO)
  - Stop the Bleed

Pre-Requisites

HPP 100: Health Professions 100

Course Objectives

- Identify roles and responsibilities of varied healthcare teams.
- Demonstrate application of safe practices in labs, classrooms, and patient settings.
- Explain health care systems including providers, settings, payments, insurance, consumer rights
- Present research findings on emerging issues impacting healthcare systems
- Explore legal and ethical practices within the health care professions.
- Explain how health care needs differ across the lifespan and the role of complementary and alternative practices.
- Describe location, structure, and functions of body systems.
- Identify word building rules and apply these rules when building and combining terms.
- Identify the medical meaning of prefixes, suffixes.
- Define, pronounce, and spell medical words for each body system.
- Translate common abbreviations, acronyms, and slang terms for each body system.
- Define pharmacology and identify common generic and trade name drugs used to treat disease.

- Discuss select diseases by body system, their etiology and treatments including pharmacological, prognosis and medical procedures/surgeries.
- Demonstrate ability to interpret, read and comprehend medical language contained in medical documents.

Integrated Academics

N/A

Concurrent Enrollment:

OCC- Medical Terminology

Equipment and Supplies

- **School will provide:** All necessary lab and classroom equipment.
- **Students will provide:** TBD

Textbook

N/A

Grading

30% In-Class Activities
30% Laboratory Experiments
10% Participation
30% Quizzes/Tests

Additional Course Policies

Attendance and Lateness

All rules regarding attendance and lateness will be followed according to the SCSD Code of Conduct. All absences will be counted as unexcused unless the school receives proper notification. Students must report to class on time or they will be marked late. If students have illegal absences or are late, they will receive a "0" for any assigned work, quizzes or tests missed during that period.

Make-up

It is the **student's** responsibility to make up any work missed due to an excused absence within 5 days of returning to school. This includes absences in which the student was not in school as well as missing a class due to participation in a sport, extracurricular activity and attending class trips or any other school event.

Time will be given in class to complete the activities and projects but any assignments not completed in class **must** be completed for homework. The items that are due for each assignment will be specified by the teacher during the lesson and posted on the board. It is the student's responsibility to complete and hand in assignments on time. Some activities and projects will be completed in groups and each person is responsible for taking notes and answering all conclusion questions. All assignments must be handed in when they are due. Failure to do so can result in a reduced grade or a zero for that assignment.

Quizzes and tests will be given throughout the course. The material covered on each test will based on the essential questions, vocabulary and content covered in each activity.

Lab Activity

If a student misses a class lab activity that cannot be made up during class time, an alternate or modified assignment may be given. In some cases, students will have to use classroom equipment to complete makeup assignments which will require that they come in after regular school hours. It is important that the makeup work is completed as soon as possible to keep up with the class material.

PLEASE NOTE: Not all lab activities can be made up. Some labs require extensive and complicated teacher preparation and some solutions and materials cannot be recreated.

Course Calendar

Quarter	Units of Study
1	• Introduction to Level 200 (both groups) and Safety Protocols • *Note: Students focus on Medical Terminology for 20 weeks or either Health Systems and Care and then rotate. One is weeks 2-20 and One is week 21-39. Making weeks 1 and 40 similar for both rotations. For purposes of brevity this curriculum will be written as a linear sequence of weeks 2-39 recognizing that students may experience the curriculum in different sequence*. • Patient Care and Communication
2	• Consumer or Patient Rights • Insurance Systems • Emerging Issues and Impact on Health Care Systems • Opioids • Legal Responsibilities and Practices • Ethics • Wellness • Healthcare Across the Lifespan • Complementary and Alternative Health Practices
3	• Introduction to Medical Terminology • Introduction to Pharmacology • Integumentary System • Digestive System • Respiratory System • Cardiovascular System • Hematologic System • Lymphatic and Immune System
4	• Muscular System • Skeletal System • Urinary System • Female Reproductive System • Male Reproductive System • Endocrine System • Nervous System • Sensory Organs: Ear and Eye • Review and Exam Preparation • Career Exploration (Both Groups)

Syracuse City School District
Career and Technical Education Program
Health Professions Scope and Sequence
Level 200

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
Week 1 **Introduction to Level 200 and Safety Protocols** Note: Students focus on either Medical Terminology for 20 weeks or Health Systems and Care. Students then rotate. There are two teachers and each will focus on either Medical Terminology or Health Care Systems and Care curriculum. Students experience one for weeks 2-20 and the other for weeks 21-39. Weeks 1 and 40 are same for both rotations. For purposes of brevity this curriculum will be written as a linear sequence of weeks 2-39 recognizing that students may experience the curriculum in different sequence. Note: Lessons and events focusing on	• What are the expectations of this course? • How is taking a one semester course different from a year long course? • How do you read, retain and demonstrate knowledge and skills? • What are safety protocols for labs and classroom environments? • What are OSHA procedures? • How is a safety data sheet completed? • What symbols are used to indicate hazardous chemicals or environment? • When and how is personal protective equipment used? • How does one apply body mechanics during patient care? • What are basic emergencies responses?	• Identify expectations and responsibilities for this course. • Explain the two parts of the course and the focus areas of each. • Identify effective reading strategies including summarization and notetaking skills. • Identify effective means for memorization and recall of information. • Articulate what strategies that feel will work best for them to process, retain and recall information. • Demonstrate application of safety protocols. • Explain OSHA protections and procedures. • Demonstrate completion of a safety data sheet. • Explain and interpret symbols indicating hazardous chemicals or environment. • Demonstrate correct use of personal protective equipment. • Demonstrate principles of body mechanics during patient care. • Explain basic emergency responses during fire or natural disaster. • Explain procedures for evacuating patients.	• Class Assignments • Self-inventories and reflection	**Career Ready Practices** CRP 1,2,4,5,9 **Cluster Standards** HL 2,3 **Pathway Standards** **National Health Science Standards** **Standard 7: Safety Practices** 7.2,7.3, 7.4,7.5	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,2,4,5,6 9-10 L1,2,3,4,6 **Literacy** 9-10 RST 2,4,5 9-10 WHST 2 **Science** **Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
safety protocols integrate throughout the year	• What are emergency procedures for evacuating patients as needed?				
Weeks 2-5 **Patient Care and Communication**	• What makes communication critical when assisting a patient and family? • What may be factors that influence effectiveness of communication? • How is effective communication demonstrated? • How is communication adapted when barriers (both physical and psychological) to communication are present? • What are personal safety procedures to protect oneself and others? • How do principles of body mechanics assist during patient care? • How are hazardous materials identified, stored, and disposed? • What are vital signs?	• Explain the role of effective communication. • Identify potential problems arising from miscommunication. • Demonstrate effective communication including to others with barriers to communication. • Identify how barriers such as language, attitudes, bias, prejudice may impact communication. • Demonstrate verbal and nonverbal communication including active listening, silence, summarizing, and reflecting. • Identify physical barriers to communication such as aphasia, hearing loss, impaired vision, developmental level. • Identify psychological barriers such as attitude, bias, prejudice, stereotyping. • Demonstrate modifications or adaptations to communication to meet needs of the patient appropriate to the situation and stage of psychosocial development. • Demonstrate taking precautions to keep oneself and others safe including use of personal protective equipment.	• Case Studies • Career Journals • Student Demonstrations and Presentations • Role Play	**Career Ready Practices** CRP 1,2,4, **Cluster Standards** HL 2 HL 3 **Pathway Standards** HL-DIA1 HL-DIA 2 HL DIA 3 HL DIA 4 HL DIA 5 **National Health Science Standards** **Standard 2: Communications** 2.1 **Standard 7: Safety Practices** 7.2,7.4, **Standard 10: Technical Skills** 10.1	**ELA** 9-10 W 2 9-10 SL 1,4,6 9-10 SL 1,4,5,6 9-10 L1,2,6 **Literacy** 9-10 RST 4,7 9-10 WHST 2 **Science** **Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	• How are vital signs measured and recorded? • How are vital signs interpreted?	• Demonstrate principles of body mechanics during patient care including ambulating, lifting, positioning. • Identify and interpret safety signs, symbols, and labels. • Demonstrate use of safety data sheets (SDS). • Demonstrate compliance with safety procedures, and regulations. • Identify vital signs. • Demonstrate measuring and recording vital signs including blood pressure, temperature, oxygen saturation, pain, pulse, respiration. • Identify normal ranges for vital signs.			
Weeks 6-11 **Introduction to Health Care Systems** **Consumer or Patient Rights** **Insurance Systems** **Emerging Issues and Impact on Health Care Systems**	• How do health care systems affect services performed and quality of care? • What are different healthcare systems and agencies? • What are general and specialized medical and dental practices? • What government agencies are responsible for policy development and provision of care? • What community-based organizations and major foundations support health care?	• Describe what is a system and system organization. • Explain the impact a system can have on outcomes. • Name varied systems within health care. • Identify types of practice settings and specialty practices. • Identify specific practices locally: acute care, ambulatory care, behavioral and mental health services, home care, long-term care, medical and dental practices. • Name specialty practices and the focus care provided. • Identify role and focus for government agencies such as Veterans Administration Centers for Disease Control and Prevention, Food and Drug Administration, Occupational Safety and	• Class Assignments • Quizzes/Tests • Class Discussions and Presentations	**Career Ready Practices** CRP 2,4,7,11,12 **Cluster Standards** HL 2,6 **Pathway Standards** Hi-HI 1,2,3 **National Health Science Standards** Standard 3: Systems 3.1 Standard 2: Communications 2.1,2.3	**ELA** 9-10 R 1,2,4,8 9-10 W 2,5,6,7 9-10 SL 1,2,4,5,6 9-10 L 1,2,3,4,6 **Literacy** 9-10 RST 2 9-10 WHST 2,5,6 **Science** **Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	• What is the history and role of insurance on health care? • What terms are associated with health insurance? • What are types of insurance? • What are consumers' rights and responsibilities with the healthcare system? • What are some emerging issues of health care delivery systems? • How is information gathered and vetted for accuracy? • How is information synthesized and summarized to effectively communicate to an audience?	Health Administration, County Public Health. • Identify community-based organizations that provide resources, research, and funding to support healthcare (examples may include American Cancer Society, American Heart Association, American Red Cross, March of Dimes, world Health Organization, etc.). • Explain the history and roles of insurance on health care. • Define insurance terms such as claim, coinsurance, co-payment, fraud, premium, open market, HIPAA. • Identify types of insurances such as private, managed care, and government programs including, Medicaid, Medicare, Tricare, Workers' Compensation, Affordable Care Act. • Explain consumer self-advocacy and Patients' Bill of Rights and other protections. • Develop key questions to guide research on emerging issue of student interest. • Demonstrate research skills to answer key questions. • Summarize emerging issues and the impact on health care systems (may include addictions, bioethics, epidemiology, socioeconomics, technology, political policies, and laws).			
Weeks 12-13 **Opioids**	• What are opioids? • What have been the unintended	• Define opioids. • Explain impacts of the use and misuse of opioids.	• Class Discussions • Class Assignments	**Career Ready Practices** CRP 2,4,5,8	**ELA** 9-10 R 1,2,4,8 9-10 W 2,3 9-10 SL 1,4,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	impacts of the use of opioids? • How has opioid use been revised and regulated? • What has been the impact of opioid addiction within community? • What has been the impact on health care systems and services? • What resources are available in the community to address opioid addiction?	• Explain impact of opioid addiction within the community. • Explain how opioid addiction has impacted the healthcare system both within healthcare facilities and community -based agencies and healthcare systems. • Identify resources within the community to address opioid addiction.			9-10 L 1,2,3,4,6
				Cluster Standards HL 2,3	**Literacy** 9-10 RST 2 9-10WHST 2
				Pathway Standards HL-THR 2	**Science**
				National Health Science Standards Standard 3: Systems 3.1	**Math**
Weeks 14-15 **Legal Responsibilities and Practices**	• What are legal responsibilities and implications for health care professionals? • How is patient privacy and confidentiality of health information secured? • What are patient's basic rights? • What are advanced directives? • What is informed and implied consent • What is scope of practice. • How are incident reports completed?	• Analyze legal responsibilities and implication of both criminal and civil law as it applies to health care professionals regarding topics such as: abuse, assault, battery, invasion of privacy, libel, malpractice, negligence, and slander. • Identify standards for the safety, privacy and confidentiality of health information including HIPAA and privileged communication. • Summarize essential characteristics of a patient's basic rights within a healthcare setting. • Describe advance directives. • Differentiate between informed and implied consent	• Student research reports/written work • Student presentations • Class assignments	**Career Ready Practices** CRP 1,2,4,5,9	**ELA** 9-10 R 1,2,4,7,8,9 9-10 W 2,4,6,7 9-10 SL 1,4,5,6 9-10 L 1,2,3,4,5,6
				Cluster Standards HL 5	**Literacy** 9-10 RST 2,4 9-10 WHST 2,5
				Pathway Standards	**Science**
				National Health Science Standards Standard 5: Legal Responsibilities 5.1, 5.2	**Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
		• Explain laws governing harassment. • Describe the concept of scope of practice. • Provide examples of scope of practice for specificized professions/licenses. • Demonstrate application of procedures for reporting activities and behaviors that affect the health, safety, and welfare of others through completion of incident report			
Weeks 16-17 **Ethics**	• What is the relationship between ethical and legal issues? • What are examples of ethical issues that may be encountered? • How might religious and cultural values impact healthcare? • How does diversity, equity, and inclusion manifest in a health care setting?	• Differentiate between ethical and legal issues impacting healthcare to include: role of ethics committee, euthanasia, in vitro fertilization, organ donation, scope of practice. • Explain the implications of selected ethical issues. • Explain the impact that ethnicity, gender, race, or religion may have on health care. • Demonstrate respectful and empathetic treatment all patients and co-workers.	• Student written work • Student presentations • Class discussions and/or debates	**Career Ready Practices** CPR 1,2,4,5,9,12 **Cluster Standards** HL 5 **Pathway Standards** HL-BRD 6 **National Health Science Standards** Standard 6: Ethics 6.1,6.2	**ELA** 9-10 R 1,2,4,7,8,9 9-10 W 2,4,6,7 9-10 SL 1,4,5,6 **Literacy** 9-10 RST 2,4 9-10 WHST 2,5 **Science** **Math**
Weeks 18-20 **Wellness** **Healthcare Across the Lifespan** **Complementary and Alternative**	• What is the relationship between wellness and disease? • What are key healthy behaviors? • What are examples of behavioral health	• Compare wellness and disease. • Identify key behaviors for wellness such as exercise, nutrition, social relationships, sleep habits, stress management, weight control. • Identify the impact of behavioral health such as	• Student written work • Student presentations • Class Assignments • Quizzes and Tests END OF SEMESTER	**Career Ready Practices** CRP 1,2,4,7 **Cluster Standards** HL 2,3,4 **Pathway Standards**	**ELA** 9-10R 1,4,7 9-10W 1,2,4,5 9-10SL 1,2,3,4 9-10L 1,2,3,6 **Literacy** 9-10RST 1,2,4,7,8,9 9-10WHST 2,4,5,6,**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 and National Health Science Standards	NYS Standards
Health Practices	that impact physical health? • What are some means to promote disease prevention? • How does healthcare differ across the lifespan? • What are examples of complementary and alternative health practices as they relate to wellness and disease prevention?	anxiety, depression, substance abuse, suicide. • Identify community health agencies and outreach programs and their functions. • Identify common medical, dental, and mental health screening and providers of such screenings across the lifespan. • Explain key aspects of physical, mental, social, and behavioral development and the impact on healthcare across the lifespan. • Describe some alternative and complementary health practices such as acupuncture, Eastern medicine, holistic medicine, homeopathy, manipulative therapies, natural therapies. • Describe the potential impact from alternative and complementary health practices		**National Health Science Standards** Standard 9: Health Maintenance Practices 9.1,.9.2	**Math**
Weeks 21-23 **Introduction to Medical Terminology**	• How can directional terms and regional terms help describe location in the body? • How are directional and anatomical positioning terms utilized?	• Define anatomical positions, body planes, directional terms, body cavities and abdominal quadrants. • Demonstrate the correct use of directionals and regional terms. • Illustrate key directional term pairs on a model of the human body. • Describe how language evolves and identify some	• Class assignments • Quiz/Tests	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	• How has medical language evolved? • Which languages are the source for most medical terms? • Why should healthcare workers know the common medical prefixes, suffixes, and roots? • Why are abbreviations, symbols, and acronyms used in health care? • How can pronunciation affect the meaning of a term? • Why is it important to spell a medical term correctly? • Why is a foundation in suffix and prefix recognition helpful? • How do prefixes and suffixes change word meaning? • Why is it important to explain medical terms to the lay person?	terms that are no longer used and some that are newer to usage. • Name the history of the etymology of medical terms. • Describe how prefixes, suffixes and roots can be combined in different ways that changes meaning. • Identify and interpret common abbreviations, symbols and acronyms used in health care. • Describe how pronunciation can affect meaning. • Explain why accurate spelling is critical. • Explain how the knowledge of suffix and prefix assists to determine meaning and understand word building rules. • Describe why translating medical terminology into lay terms is important for patient care.		**Standard 1**: Academic Foundation 1.1,1.2	**Math**
Week 24 **Introduction to Pharmacology**	• What is pharmacology? • What are the differences between generic and trade name drugs?	• Define pharmacology. • Define generic and trade name drugs. • Identify and match common generic and trade name drugs. • Explain how etymology helps to interpret pharmacology	• Class Assignments • Quiz	**Career Ready Practices** CRP 1,2	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL1	**Literacy** 9-10 RST 2,4 9-10 WHST 2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	• How does knowledge of etymology assist in interpreting pharmacology terms?	terms.		**Pathway Standards** HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science**
				Standard 1: Academic Foundation 1.2 **Standard 2:** Communication 2.2	**Math**
Week 25 **Integumentary System**	• What terms are associated with the integumentary system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the integumentary system? • What are some common diseases associated with the integumentary system?	• Define, locate, pronounce, and spell terms associated with the integumentary system- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to melanoma). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 26 **Digestive System**	• What terms are associated with digestive system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the digestive system? • What are some common diseases associated with the digestive	• Define, locate, pronounce, and spell terms associated with digestive system (chemical and mechanical)- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1,1.2	**Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	system?	but not limited to gastric ulcer and hepatis). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.		**Standard 2: Communication** 2.2	
Week 27 **Respiratory System**	• What terms are associated with the respiratory system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the respiratory system? • What are some common diseases associated with the respiratory system?	• Define, locate, pronounce, and spell terms associated with the respiratory system-including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to asthma, cystic fibrosis, and tuberculosis). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 Hl-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 28 **Cardiovascular System**	• What terms are associated with cardiovascular system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the cardiovascular system? • What are some common diseases associated with the cardiovascular	• Define, locate, pronounce, and spell terms associated with cardiovascular system-including structures and functions (examples atria, ventricles, valves). • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to hypertension, stroke, and	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 Hl-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1,1.2 **Standard 2: Communication** 2.2	**Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	system?	myocardial infarction). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.			
Week 29 **Hematologic System**	• What terms are associated with the hematologic system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the hematologic system? • What are some common diseases associated with the hematologic system?	• Define, locate, pronounce, and spell terms associated with the hematologic system- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to stroke and cerebrovascular accident). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 Hl-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1,1.2 **Standard 2: Communication** 2.2	**Math**
Week 30 **Lymphatic and Immune System**	• What terms are associated with the lymphatic and immune system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the lymphatic and immune system? • What are some common diseases associated with the lymphatic and immune system?	• Define, locate, pronounce, and spell terms associated with the lymphatic and immune system- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to cancer and immune disorders). • Identify and discuss selected treatments, pharmacological and medical procedures, and	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 Hl-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
		prognosis.			
Week 31 **Muscular System**	• What terms are associated with the muscular system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the muscular system? • What are some common diseases associated with the muscular system?	• Define, locate, pronounce, and spell terms associated with the muscular system- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to muscular dystrophy). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 32 **Skeletal System**	• What terms are associated with the skeletal system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the skeletal system? • What are some common diseases associated with the skeletal system?	• Define, locate, pronounce, and spell terms associated with the skeletal system- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to arthritis). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 33 **Urinary System**	• What terms are associated with the urinary	• Define, locate, pronounce, and spell terms associated with the urinary system-	• Class Assignments • Student	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the urinary system? • What are some common diseases associated with the urinary system?	including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to urinary tract infection). • Identify and discuss selected treatments, pharmacological, medical procedures, and prognosis	Demonstrations • Quiz		9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 34 **Female Reproductive System**	• What terms are associated with the female reproductive system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the female reproductive system? • What are some common diseases associated with the female reproductive system?	• Define, locate, pronounce, and spell terms associated with the female reproductive system- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases and stages of reproductive process. • Explain how common diseases impact function of this body system (including but not limited to sexually transmitted infections). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 35	• What terms are associated with the male reproductive	• Define, locate, pronounce, and spell terms associated with the male reproductive	• Class Assignments • Student	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
Male Reproductive System	system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the male reproductive system? • What are some common diseases associated with the male reproductive system?	system- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases and stages of reproductive process. • Explain how common diseases impact function of this body system (including but not limited to sexually transmitted infections). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	Demonstrations • Quiz		9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 36 **Endocrine System**	• What terms are associated with the endocrine system? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the endocrine system? • What are some common diseases associated with the endocrine system?	• Define, locate, pronounce, and spell terms associated with the endocrine system- including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to diabetes mellitus). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 37 **Nervous System**	• What terms are associated with the nervous system? • How are the terms	• Define, locate, pronounce, and spell terms associated with the nervous system- including structures and functions.	• Class Assignments • Student Demonstrations	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the nervous system? • What are some common diseases associated with the nervous system?	• Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited concussions, traumatic brain injury, dementia). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Quiz	**Cluster Standards** HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 38 **Sensory Organs: Ear and Eye**	• What terms are associated with the sensory system, especially ear and eyes? • How are the terms created from component parts? • What are common abbreviations, acronyms, and slang terms applied in the sensory system, especially ear and eyes? • What are some common diseases associated with the sensory system, especially ear and eyes?	• Define, locate, pronounce, and spell terms associated with the sensory system, especially ear and eyes, - including structures and functions. • Explain how the medical terms are created from components and how etymology impacts meaning. • Define abbreviations, acronyms, and slang terms. • Name common diseases. • Explain how common diseases impact function of this body system (including but not limited to cataracts). • Identify and discuss selected treatments, pharmacological and medical procedures, and prognosis.	• Class Assignments • Student Demonstrations • Quiz	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 R 1,2,4 9-10 W 2 9-10 SL 1,6 9-10 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 9-10 RST 2,4 9-10 WHST 2
				Pathway Standards HL-DIA 1,2,4,5 HL-HI 1,2 HI-THR 1,2,3,4	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2 **Standard 2: Communication** 2.2	**Math**
Week 39 **Review and Exam Preparation**	• What are areas of need to review? • What areas are a strength? • What study skills will best serve	• Identify individual areas that need to be attended to by whole class, small groups and individuals by reviewing past student work and self-reflection.	• Self-reflection • Observation • Final exam	**Career Ready Practices** CRP 1,2,4	**ELA** 9-10 SL 1,4 9-10 L 1,2,3,4,6
				Cluster Standards	**Literacy** 9-10 RST4 9-10 WHST 2

Time Frame Unit of Study	Key Questions	Key Learning Targets (Students will know and be able to)	Assessment Evidence of Learning	CCTC Standards and National Health Science Standards	NYS Standards
	each individual student. • How can one prepare physically as well as academically for an exam?	• Through self-reflection, identify study strategies that assist with exam preparation • Articulate how exam preparation includes physical and relaxation along with academic preparation.		**Pathway Standards**	**Science** HS-LS 1-2
				Standard 1: Academic Foundation 1.1, 1.2	**Math**
Week 40 **For Both groups** **Career Exploration**	• What career(s) within health professions are intriguing?	• Identify varied career pathways within health professions including those with direct patient care, those with administrative focus, those with research focus, etc. • Articulate personal skills, traits, and interests. • Name a few potential career pathways of interest. • Identify educational and experiences required for careers of interest. • Articulate personal career goals.	• Student Reflection • Student Journal • Student Self-assessment • Student Goals	**Career Ready Practices** CRP 4,5,7,10	**ELA** 9-10 R 1,2 9-10 W 2,6,7 9-10SL 1,2,4 9-10 L 1,2,3,4,**6**
				Cluster Standards	**Literacy** 9-10 RST 2 9-10 WHST 2,5,6
				Pathway Standards	**Science**
				National Health Science Standards Standard 4: Employability Skills 4.1, 4.3	**Math**

Syracuse City School District
Career and Technical Education Program
Course Syllabus
HPP 300: Health Professions

Program Overview

The Health Professions Program provides a preparatory pathway for students desiring to enter a variety of health careers, including nursing, physical therapy, radiation therapy, respiratory therapy, physician's assistant, and many others. The learning environment is designed to prepare students for the rigors of the dynamic health care profession. Instruction will introduce students to infection control, medical terminology, human growth and development, anatomy and physiology, the structure and function of body systems, the study of diseases and the disease process, technology in healthcare, medical ethics and jurisprudence, standards of professional conduct, patient communication, and the fundamentals of patient care.

Course Description-NEED TO REWRITE

Level 300 builds upon concepts introduced in the previous level. Students continue to explore healthcare systems as pertaining to information technology, medical records, and behavioral and mental healthcare systems. While students explore the systems of providing health care, focus is on communication. Students will experience providing presentations both individually and as part of a team, that are clear, concise, and engaging. In addition, preparation for Anatomy and Physiology coursework is through study of basic biochemistry and cell level physiology and functioning. This level bridges from the introduction of body systems in level 200 to beginning anatomy and physiology college level course work. Supporting students through post-secondary planning is incorporated into this level.

Work-Based Learning

Students will be connected with professionals in the design field. These professional connections may include interviews, field trips to local businesses, virtual field trips to other locations, presenting their learning and work samples to professionals, advanced students, job shadowing and career coaching. It is expected that these experiences will lead to opportunities for direct job training and real-world experience in an internship opportunity prior to completion of the program. Students will create and maintain a portfolio of their experiences to document the development of their skills, including a professional resume.

Additional Learning Opportunities

- Micro-credentials: Students may pursue learning experiences and credentials depending on the requirements of the project that they are involved in. Some examples for this pathway include, but are not limited to:
  - OSHA 10 Hour General Industry Certification
  - Provider First Aid
  - Stop the Bleed
  - Cardiopulmonary resuscitation (CPR)
  - Automated external defibrillator (AED)
  - Foreign body airway obstruction (FBAO)

Pre-Requisites

HPP 100: Health Professions 100
HPP 200: Health Professions 200

Course Objectives-NEED TO REDO

- Articulate personal post-secondary goals and action plan including personal finance literacy and employment search process.
- Demonstrate safe practices for self and patients.
- Demonstrate application of strategies for productive teams.
- Describe the use of information technology within medical professions.
- Identify mental and behavioral healthcare systems and resources.
- Demonstrate ability to interpret, read and comprehend medical language contained in medical documents.
- Identify infectious pathogens.
- Demonstrate communication skills to educate the public on containment for an infectious pathogen.
- Explain the organization of the human body systems.
- Identify and explain foundational concepts of biochemistry including cellular level functioning.
- Explain select medical interventions including emerging science, ethics, and medical determinates.

- Present information in clear, concise, and engaging manner both written and verbally.

Integrated Academics

1 CTE Integrated Science Credit

Concurrent Enrollment

OCC- Communication

Equipment and Supplies

- **School will provide:** All necessary lab and classroom equipment.
- **Students will provide:** A notebook for taking and saving notes, pen/pencils, USB thumb drive to save/transfer data.

Textbook

N/A

Grading

50% Quizzes/Tests
30% In-Class Activities
20% Laboratory Experiments

Additional Course Policies

Attendance and Lateness

All rules regarding attendance and lateness will be followed according to the SCSD Code of Conduct. All absences will be counted as unexcused unless the school receives proper notification. Students must report to class on time or they will be marked late. If students have illegal absences or are late, they will receive a "0" for any assigned work, quizzes or tests missed during that period.

Make-up

It is the **student's** responsibility to make up any work missed due to an excused absence within 5 days of returning to school. This includes absences in which the student was not in school as well as missing a class due to participation in a sport, extracurricular activity and attending class trips or any other school event.

Time will be given in class to complete the activities and projects but any assignments not completed in class **must** be completed for homework. The items that are due for each assignment will be specified by the teacher during the lesson and posted on the board. It is the student's responsibility to complete and hand in assignments on time. Some activities and projects will be completed in groups and each person is responsible for taking notes and answering all conclusion questions. All assignments must be handed in when they are due. Failure to do so can result in a reduced grade or a zero for that assignment.

Quizzes and tests will be given throughout the course. The material covered on each test will based on the essential questions, vocabulary and content covered in each activity.

Lab Activity

If a student misses a class lab activity that cannot be made up during class time, an alternate or modified assignment may be given. In some cases, students will have to use classroom equipment to complete makeup assignments which will require that they come in after regular school hours. It is important that the makeup work is completed as soon as possible to keep up with the class material.

PLEASE NOTE: Not all lab activities can be made up. Some labs require extensive and complicated teacher preparation and some solutions and materials cannot be recreated.

Course Calendar

Quarter	Units of Study
1	• Introduction to Level 300 • Review of Safety Protocols and Procedures • Career Exploration: Preparation for Post-Secondary Opportunities (includes Personal Finance)

	• Communication and Team Presentations *(Note- it is likely that this unit is incorporated throughout the year and embedded into the following units)* • Health Care Professions Teamwork (Career Exploration)
2	• Information Technology in Healthcare • Mental and Behavioral Health • Infections and Public Education
3	• Medical Documents • Organization of Human Body Systems • Chemistry: Introduction to Biochemistry • Cell Structure, Function and Physiology
4	• Protein Synthesis • Cellular Reproduction • Review of Anatomy and Physiology • Communication about a Selected Human Body System • It is All Connected • Career Exploration, Employability and Reflection

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
HPP300: Health Professions

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 **Introduction to Level 300** **Review of Safety Protocols and Procedures**	• What are the expectations for this course? • What are individual goals for the course? • What are critical safety protocols and procedures for personal safety in a variety of settings? • What are critical safety protocols and procedures to ensure safety of patients?	• Name expectations and procedures for the course. • Identify personal learning goals for the course. • Demonstrate application of safe personal practices. • Demonstrate application of safety protocols and procedures for patient safety.	• Class Assignments • Student Journal • Student Demonstrations • Completion of OSHA 10 Hour Certification	**Career Ready Practices** CRP 1,2,4,5,9 **Cluster Standards** HL-2,3 **Pathway Standards** **National Health Science Standards** Standard 7: Safety Practices 7.2,7.3, 7.4,7.5	**ELA** 11-12 R 1,2,4 11-12 W 2 11-12 SL 1,6 11-12 L 1,2,3,4,6 **Literacy** 11-12 RST 2,4 11-12 WHST 2 **Science** **Math**
Weeks 3-4 **Career Exploration: Preparation for Post-Secondary Opportunities and Employment (includes personal finance)**	• How is a budget developed? • How can loans and other lines of credit be used responsibly? • What are estimates for necessary expenses and salary for career of interest? • How does location impact both cost of living and salary? • What are future outlooks for employability in career of interest? • What are individual personal skills, traits, and attitudes beneficial for career of interest? • What does a job search entail?	• Develop a post-secondary budget. • Describe how loans and lines of credit work and how to be an informed and responsible consumer. • Identify educational and experiential requirements for career of interests. • Demonstrate research skills to determine outlook for future employability for career of interest. • Compare and contrast cost of living and salary across a variety of locations. • Analyze requirements of career of interest and identify areas of personal strengths and gaps regarding skills, traits, and attitudes. • Identify tools for employment search. • Develop a personal resume and other related documentation for employment search. • Demonstrate using personal documents and employment search tools to locate potential employment.	• Class Assignments • Student Research • Student Self-Assessment • Student Portfolio or Journal • Student Resume • Student Certifications	**Career Ready Practices** CRP 1,2,3,4,5,10 **Cluster Standards** HL 3 **Pathway Standards** **National Health Science Standards** Standard 4: Employability 4.3, 4.4 Standard 10: Technical Skills 10.1	**ELA** 11-12 R 1,2,4 11-12 W 2 11-12 SL 1,6 11-12 L 1,2,3,4,6 **Literacy** 11-12 RST 2 11-12 WHST 2,5,67 **Science** **Math**

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 personal documentation supports an employment search? • What are the educational and experiential requirements for career of interest? • If post-secondary is required, where are some potential places of study? • How can a visit or interview help inform a decision? • How is a post-secondary learning opportunity financed? • What other supports are available to set up for success? • What might need to be a goal to further success? • How is application made to post-secondary institutions or for employment? • What additional certifications will support career goals?	• Identify post-secondary institutions of learnings that match personal preferences (degree, experiences, environment, location, expense, financial and other supports). • Apply interviewing and research techniques to narrow post-secondary choices. • Identify supports for academics, emotional, and financial that are available to support student success. • Identify what materials are required for application to post-secondary employment or college or university. • Identify any further actions needed to take this school year to enhance future opportunities. • Create a portfolio of letters of recommendations, resumes, certifications etc. to support application. • Demonstrate proficiency in emergency care by completing certifications in AED, CPR, FBAO, First Aid.			
Weeks 5-6 **Communication and Presentations** **(Note- it is likely that this unit may be incorporated throughout the year and embedded into the following units)**	• What makes communication effective? • What makes a good listener? • When and how might communication need to be adapted? • What makes a presentation interesting and engaging? • Why is specific language and word choice important? • How do visual aids or other sensory input enhance communication?	• Identify aspects of effective communication. • Identify aspects of an engaged listener. • Identify environments and situations where communication may need to be adapted. • Identify components of an interesting and engaging presentation. • Demonstrate use of strategies to engage an audience. • Explain the importance of use of specific language and the impact of word choice. • Demonstrate application of specific academic language. • Compare and contrast the impact of word choice.	• Class Assignments • Role-Plays • Self-Assessment • Journal • Whole class and small group presentations	**Career Ready Practices** CRP 1,2,4,9,12 **Cluster Standards** HL 4 **Pathway Standards** **National Health Science Standards** Standard 2: Communication 2.1	**ELA** 11-12 R 2 11-12 W 2 11-12 SL 1,3,4,6 11-12 L 1,2,3 4,6 **Literacy** 11-12 RST 2 11-12 WHST 2 **Science** **Math**

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 potential impact of visual aids to engage and support the listener. • Demonstrate application of appropriate visual aid and other sensory input. • Demonstrate examples of effective speaking and listening.			
Week 7-9 **Health Care Professions Teamwork (Career Exploration)**	• What makes an effective team? • What are the benefits and drawbacks of working in a team? • What are the strengths you bring to a team? • What makes a productive team member? • What makes an effective team leader? • What helps a team to function productively? • How can conflict be addressed and resolved? • Why are teams beneficial in health professions? • How are roles and responsibilities of team members determined? • In what ways does teamwork impact day to day experiences of health care professionals	• Identify characteristics of effective teams. • Articulate what may be benefits of working as a team, as well as potential drawbacks. • Reflect and identify personal strengths for teamwork. • Generate ways to accentuate the benefits of working as a team. • Explain what traits and skills productive team members exhibit. • Explain what traits and skills an effective team leader exhibits. • Demonstrate characteristics of an effective team member. • Explain strategies and habits that effective teams exhibit. • Identify effective techniques for managing team conflict. • Demonstrate application of techniques to resolve team conflicts. • Identify means to resolve conflict. • Demonstrate application of effective and productive team functioning. • Identify methods for establishing positive team relationships. • Evaluate why teamwork is important and the impact on patient care. • Identify roles and responsibilities of varied healthcare teams. • Summarize information and perceptions of practicing health care professionals regarding the impact of teamwork on patient care and work environment.	• Student Journal • Role-Plays • Class Assignments • Interviews and Research with Practitioners • Class Presentations	**Career Ready Practices** CRP 1,4,5,9,12 **Cluster Standards** HL 4 **Pathway Standards** **National Health Science Standards** Standard 8: Teamwork 8.1,8.2,	**ELA** 11-12 R2 11-12 W 2 11-12 SL 1,4,5,6 11-12 L 1,2,3,4,6 **Literacy** 11-12 RST 2 11-12 WHST 2 **Science** **Math**
Week 10-13	• Why is patient identification important?	• Explain why positive patient identification is critical.	• Class assignments • Quiz	**Career Ready Practices** 1,2,4,9,11	**ELA** 11-12 R 1,2,4 11-12 W 2 11-12 SL 1,6

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
Information Technology in Healthcare	• What are components of an electronic health record or medical record? • What benefit is sharing of patients' records? • How is patient data collected? • What policies and regulations guide the use of information technology?	• Name components of a medical record such as diagnostic test, medical history, medications, patient demographics, progress notes, treatment plan. • Demonstrate accurate reading and interpretation of a case medical records. • Explain benefit of share of medical records. • Explain policies, procedures, and regulations to safeguard misuse of patient medical information. • Identify different types of health data collection tools available through technology.			11-12 L 1,2,3,4,6
				Cluster Standards HL 2,4,5	**Literacy** 11-12 RST 1,2,4 11-12 WHST 2
				Pathway Standards HL-HI 1,2,3	**Science** **Math**
				National Health Science Standards Standard 11: Information Technology in Health care 11.2	
Weeks 14-17 **Mental and Behavioral Health**	• What are screenings for mental and behavioral health? • What are common diagnoses in mental health? • What resources are available to provide mental and behavioral interventions and support? • What is the suicide hotline? • What resources are available for addictions? • What are ways to manage stress?	• Identify common screening techniques for mental and behavior health. • Name possible diagnoses and symptoms for anxiety and depression. • Name other mental and behavioral diagnoses. • Identify resources within the community to provide mental and behavioral care. • Identify community outreach programs. • Name suicide prevention resources including the hotline number. • Identify resources to support addiction treatment/care. • Demonstrate ways to manage stress (physical exercise, meditation, yoga, etc.).	• Class Assignments • Student Research • Student Presentations • Quiz	**Career Ready Practices** CRP 1,2,3,4	**ELA** 11-12 R 1,2,4 11-12 W 2 11-12 SL 1,6 11-12 L 1,2,3,4,6
				Cluster Standards HL 2,3	**Literacy** 11-12 RST 2,4 11-12 WHST 2,5
				Pathway Standards HL-HI 1 HL THR 1	**Science** HS-LS 1-2 **Math**
				National Health Science Standards Standard 9: Health Maintenance Practices 9.1	
Weeks 18-20 **Infections and Public Education**	• How are infectious diseases spread through a population? • How does the immune system function to protect the human body from foreign invaders?	• Describe the mode of transmission and mode of reproduction of various infectious agents. • Describe the prevention of and treatment for various infectious agents. • Identify the basic structures of a bacterial cell.	• Laboratory Reports • Simulated Diagnostic Testing • Quiz • Career Journal • Class and public presentations	**Career Ready Practices** CRP 2,4,7,8,11	**ELA** 11-12 R 1,4,8 11-12 W 1,2,,6 11-12 SL 1,2,4,5,6 11-12 L 1,2,3,4,6
	• What is aseptic technique?	• Describe how the immune system responds when an antigen enters the		**Cluster Standards** HL 3	**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 can an unknown sample of bacteria be identified? • What role does public health agencies play to communicate about and contain spread of a pathogen? • Why are communication skills critical to educate the general public?	body. • Demonstrate the transmission of a simulated infectious agent. • Compare and contrast the biology and pathology of various infectious agents. • Use proper aseptic technique to isolate bacterial colonies. • Perform a gross examination of bacterial colonies to differentiate an unknown bacterial sample. • Use proper Gram staining and microscope techniques to stain, observe, and classify bacteria. • Chemically examine and identify unknown bacteria. • Explain the role of public health agencies to contain the spread and to educate the public. • Demonstrate application of presentation, communication skills and knowledge regarding infection containment to educate an audience regarding a spreading virus.			11-12 RST 1,2,4,7 11-12 WHST 2,5,6,7
				Pathway Standards HL-HI 1	**Science**
				National Health Science Standards Standard 2: Communication 2.1 Standard 7: Safety 7.1,7.2,7.3	**Math**
Week 21-22 **Medical Documents**	• How are medical terms used to communicate to other professionals effectively and efficiently? • When might it be necessary to translate medical terms to lay language?	• Demonstrate accurate reading and writing of medical records and documents. • Demonstrate accurate interpretation of medical records and documents. • Explain when and why it may be necessary to translate medical terms to lay terms. • Demonstrate accurate explanation of medical records or documents into lay terms.	• Student Demonstrations • Quiz/Test • Class Assignments	**Career Ready Practices** CRP 1,2,4	**ELA** 11-12 R 1,2,4 11-12 W 2 11-12 SL 1,6 11-12 L 1,2,3,4,6
				Cluster Standards HL 4	**Literacy** 11-12 RST 2,4 11-12 WHST 2
				Pathway Standards HL-HI 1,2,3	**Science** HS-LS 1
				National Health Science Standards Standard 1: Academic Foundation 1.1,1.2 Standard 2: Communication 2.2, 2.3	**Math**

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 23-25 **Organization of Human Body Systems**	• How is the human body organized from cells to systems? • What are examples of human body systems? • What organs make up the different body systems? • How do the different body systems interact to maintain good health? • What might be the consequence of malfunctions in any of the body systems? • How can prevention measures and medical interventions prolong life? • How can directional terms and regional terms help describe location in the body?	• Explain how the human body can be organized from cells to systems. • Explain the functions of different human body systems and list the major organs within each system. • Describe how multiple body systems are interconnected and how those interconnections and interactions are necessary for life. • Explain the ways an illness affects the various body systems. • Analyze autopsy reports and medical history documents to determine cause of death. • Deliver a quality visual and oral presentation. • Demonstrate the correct use of directionals and regional terms. • Illustrate key directional term pairs on a model of the human body.	• Laboratory Reports • Class Assignments • Class Presentations	**Career Ready Practices** CRP 2,4,7,8,11	**ELA** 11-12R 1,4,8 11-12W 1,2,4,5,6,7 11-12SL 1,2,4,5,6 11-12L 1,2,3a,6
				Cluster Standards HL 1	**Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7
				Pathways Standards HL-DIA 1,2,5	**Science** HS-LS1-1 HS-LS1-2
				National Health Science Standards Standard1: Academic Foundation 1.1	**Math**
Weeks 26-27 **Chemistry: Introduction to Biochemistry**	• 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 do molecules bond together to form larger molecules? • What is a solution and how are they classified? • How does the structure of water determine its function? • How do acids and bases change solutions?	• 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. • Describe what makes a solution and how to classify solutions. • Explain the impact of acids and bases on solutions. • Explain the role of buffers in the human body.	• Lab Reports • Class Assignments • Quizzes/Tests	**Career Ready Practice** CRP 1,2,4,7,8,9,11,12	**ELA** 11-12 R 1,4,7 11-12 W 1,2,4,5 11-12 SL 1,4 11-12 L 1,2,3,6
				Cluster Standards HL 1	**Literacy** 11-12 RST 1,2,3,4,7,8,9 11-12 WHST 2,4,5,6,7
				Pathway Standards HL-BRD 2,4	**Science** **NEED TO HAVE SOMEONE COMPLETE**
				National Health Science Standards Standard 1: Academic Foundation 1.1	**Math**

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 a buffer and how are they important in the human body? • 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? • How do temperature, pH and enzyme/substrate concentration affect enzyme function? • What are co-enzymes and how d they assist with enzymatic reactions?	• Differentiate between organic and inorganic molecules. • Explain the properties of an organic molecule. • Explain the relationship between monomers and polymers. • Describe the general structure of a macromolecule, including the reactions used to synthesize and break down. • Describe the structure and functions of the following: carbohydrates: monosaccharides, disaccharides, and polysaccharides. • Describe the structure and functions of the following classes of lipids: fatty acids, glycerides, eicosanoids, steroids, phospholipids, and glycolipids. • Name the four levels of protein structure. • Describe protein structure, including the four levels of structural complexity and how protein structure can be disrupted by denaturation. • Match protein shape to function. • Describe the structure and functions of the following classes of nucleic acids: DNA and RNA. • Explain how the DNA inside of the nucleus determines genetic traits and the instructions to build proteins. • Describe the structure and function of ATP. • List the primary functions of proteins (enzymes, hormones, antibodies) in the body. • Explain the function and importance of enzymes. • Explain the effects of heat ,pH on protein structure. • Label and describe the parts of an enzyme and steps of an enzymatic reaction. • Explain the role of co-enzymes in an enzymatic reaction.			
Weeks 28-30	• What is a cell?	• State functions of each of the following cell structures/organelles: cell	• Lab Reports • Models	**Career Ready Practices**	**ELA** 11-12 R 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 Structure, Function and Physiology	• 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 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? • What are chemical reactions and how are they used in the human body? • Why does one person's metabolism differ from another? • How is water used in the body to build and break down molecules? • How do cells move large molecules across the cell membrane? • What is ATP used for in living things? • How does the structure ATP relate to its function? • What molecules are required to produce ATP? • What role does the presence of oxygen play in the production of ATP? • What are the steps involved in aerobic and anaerobic respiration?	membrane, cytoplasm, nucleus, nuclear membrane, ribosome, rough/smooth endoplasmic reticulum, golgi apparatus, lysosome. • Explain how cellular organelles work together to maintain homeostasis. • Describe the structure and function of the plasma membrane including that it is phospholipid bilayer and describe its importance in cellular function. • Describe the difference between active and passive transport. • Identify and define types of passive transport (diffusion and osmosis). • Define and recognize examples of diffusion. • Explain why some molecules cannot move through the cell membranes. • Describe diffusion. • Differentiate between solute and solvent. • Define a solution. • Recognize hypertonic, hypotonic, and isotonic solutions and predict the movement of solutes in each. • Differentiate between integral and peripheral proteins. • Explain the role of channel proteins and carrier proteins. • Demonstrate the ability to identify reactants and products in a chemical reaction. • Describe and recognize catabolic and anabolic reactions. • Define metabolism and explain how it is determined in the human body. • List and describe the various types of passive cell transport. • Describe active cell transport. • Describe the various types of vesicular transport. • Explain the processes of hydrolysis and dehydration synthesis and recognize examples of each.	• Simulations • Class Assignments • Quizzes/Tests	CRP 1,2,4,7,8,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** Standard 1: Academic Foundation 1.1	11-12 W 1,2,4,5,6,7 11-12 SL 1,4 11-12 L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 **Math**

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 hydrolysis and dehydrations synthesis used to recycle ATP? • Explain the pathways used in ATP production under both aerobic and anaerobic conditions. • Describe the pathways involved in cellular ATP production including glycolysis, Kreb's cycle and the electron transport chain. • Explain how energy is recycled using the processes of dehydration synthesis and hydrolysis of ATP/ADP	• Describe the processes of glycolysis, the citric acid cycle and the electron transport chain. • Differentiate between aerobic and anaerobic respiration. • Describe the structure of ATP and explain how energy is stored in ATP. • Explain how energy is recycled using eh processes of dehydration synthesis and hydrolysis of ATP/ADP			
Weeks 32 **Protein Synthesis**	• 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 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? • What are proteins and how are they used in the human body?	• Explain that DNA inside of the nucleus determines genetic traits and instructions to build proteins. • Identify the components in a nucleotide. • Explain the structure of DNA. • Identify the relationships between bases, genes, DNA, chromosomes, and nucleus. • State the four bases in DNA and demonstrate the base paring rules. • Explain the processes of transcription and translation. • Identify that ribosomes are made in the nucleus. • Explain the role of mRNA and tRNA during protein synthesis. • Demonstrate the ability to transcribe DNA into mRNA • Demonstrate the ability to translate mRNA into amino acids. • Explain that proteins are built on the ribosome in the cytoplasm. • Describe the roles of the endoplasmic reticulum and golgi apparatus during translation/post-translation modification. • Identify the four levels of protein structure.	• Lab Reports • Models • Simulations • Class Assignments • Quizzes/Tests	**Career Ready Standards** CRP 1,2,4,9,11,12 **Cluster Standards** HL 1,3 **Pathways Standards** HL-BRD 2,4 **National Health Science Standards** Standard 1: Academic Foundation 1.1	**ELA** 11-12 R 1,4,7 11-12 W 1,2,4,56,7 11-12 SL 1,4 11-12 L 1,2,3,6 **Literacy** 11-12 RST 1,3,4 11-12 WHST 2,4 **Science NEEDS TO BE COMPLETED** **Math**

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
		• Recognize that protein shape determines its function. • Explain the function of examples of proteins in the human body (enzymes, hormones, antibodies). • 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			
Weeks 33-34 **Cellular Reproduction**	• How do cells reproduce? • What is the purpose of asexual reproduction? • What are the steps of mitosis? • What are the end products of mitosis? • What are gametes and how are they formed? • How does the process of meiosis ensure genetic variety? • What are the steps of meiosis? • What similarities and differences are there	• Identify mitosis as a form of asexual reproduction. • Identify that mitosis forms 2 genetically identical, diploid daughter cells. • State and identity the steps of mitosis. • Explain the role of mitosis in the human body. • Explain the role of meiosis in the human body. • Recognize that meiosis forms 4 genetically different, haploid gametes. • Compare and contrast the products of mitosis and meiosis. • Explain how the diploid number is restored during the process of fertilization.	• Lab Reports • Class Assignments • Drawings/Models • Quizzes/Tests	**Career Ready Standards** CRP 1,2,4,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 **National Health Science Standards**	**ELA** 11-12 R 11-12 W 11-12 SL 11-12 L **Literacy** 11-12 RST 1,3,4 11-12 WHST 2,4 **Science** **NEEDS TO BE COMPLETED** **Math**

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
	between mitosis and meiosis? • What are haploid and diploid cells and how is each formed?			Standard 1: Academic Foundation 1.1,1.2	
Week 35-36 **Review of Anatomy and Physiology**	• In what ways do different body systems work together to carry out its functions? • How can directional terms and regional terms help describe locations in the 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 categories used to define levels of cellular organization in the human body?	• Explain how proper function of the human body requires multiple systems to work together. • Explain how directional terms and regional terms can be used to pinpoint location on the body. • Demonstrate the correct use of directional and regional terms. • Illustrate key directional term pairs on a model of the human body. • Explain the levels of organizational units used within the human body (organelles, cells, tissues, organs, organ systems). • Identify characteristics of the 4 categories of human tissue.	• Lab Reports • Models • Manikin building • Class Assignments • Quizzes/Test	**Career Ready Practices** CRP 1,2,4,7,9,12	**ELA** 11-12 2,4 11-12 W 2 11-12 SL 1,4,5,6 11-12 L 1,2,3,4,6
				Cluster Standards HL 1,3	**Literacy** 11-12 RST 1,3,4 11-12 WHST 2,4
				Pathway Standards HL-BRD 2,4	**Science**
				National Health Science Standards Standard 1: Academic Foundation 1.1,	**Math**
Weeks 37-39 **Communication about Selected Human Body System**	• What are the human body systems studied previously during medical terminology course? • How can a presentation be created to share information regarding a human body system to be informative and engaging? • Why is anticipating questions support preparedness for a presentation. • How is a presentation evaluated. • How might feedback be incorporated to improve a presentation?	• Review and list the body systems studied in previous level. • Create and present an informative and engaging mini lesson on a selected body system. • Articulate anticipated questions from an audience. • Develop answers to anticipated questions from the target audience. • Evaluate and identify means to improve presentation.	• Class Assignments • Class Presentation • Self-Reflection	**Career Ready Practice** CRP 1,2,4,6,7,9,11	**ELA** 11-12 R 1 11-12 W 2 11-12 SL 1,4,5,6 11-12 L 1,2,3,4,6
				Cluster Standards HL 1	**Literacy** 11-12 RST 2 11-12 W 2
				Pathway Standards HL-HI 1	**Science**
				National Health Science Standards Standard 1: Academic Foundation 1.1	**Math**

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
				Standard 2: Communication 2.1,2.3	
Week 40 **It is All Connected** **Career Exploration, Employability and Reflection**	• Why do some diseases impact multiple body systems (such as cystic fibrosis)? • Why is a cost benefit analysis necessary for a prescribed treatment? • What are examples of emerging or experimental treatments? • How do lifestyle choices and environments impact the health of body systems? • What skills, traits and attitudes do you have to make you a good fit for a career in health professions? • What are careers of interest? • What are the actions you need to take to pursue your career goal?	• Explain how disease and injury can impact multiple body systems. • Provide examples of disease and injury impacting multiple body systems. • Explain how benefits and risks are considered for any treatment plan. • Explain the purpose of clinical trials. • Identify examples of emerging or experimental treatments. • Explain how lifestyle choices and environment impacts the development and prognosis for disease and/or injury. • Articulate personal skills, traits and attitudes that match with career in health professions. • Identify careers of interest. • Identify actions required (educational, experiential) to pursue career of choice. • Develop an action plan to pursue career of choice.	• Class Assignments • Class Presentations • Self-assessment • Student Portfolio • Student Resume • Student Action Plan	**Career Ready Practices** CRP 1,2,4,10 **Cluster Standards** HL 1 **Pathway Standards** HI-DIA 1,2,5 **National Health Science Standards** Standard 1: Academic Foundation 1.2 Standard 2: Communication 2.2 Standard 6: Ethics 6.1 Standard 9: Health Maintenance Practices 9.1	**ELA** 11-12 R 1,2,4 11-12 W 2,3,6,7 11-12 SL 1,2,4,6 11-12 L 1,2,3,4,6 **Literacy** 11-12 RST 2,4 11-12 WHST 2,5 **Science** HS-LS 1-2

Syracuse City School District Course Syllabus
Career and Technical Education Program
Course Syllabus
HPP 400: Health Professions

Program Overview

The Health Professions Program provides a preparatory pathway for students desiring to enter a variety of health careers, including nursing, physical therapy, radiation therapy, respiratory therapy, physician's assistant, and many others. The learning environment is designed to prepare students for the rigors of the dynamic health care profession. Instruction will introduce students to infection control, medical terminology, anatomy and physiology, the structure and function of body systems. the study of diseases and the disease process. Students will also examine technology in healthcare, medical ethics and jurisprudence, standards of professional conduct, patient communication, and the fundamentals of patient care.

Course Description

HPP 400 is a capstone course that integrates skills and knowledge learned in previous health professions and science 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, research, and professional certifications. Upon completion of this course, students will be prepared to either continue upper level courses in science and/or enter the workforce with professional certifications.

Work-Based Learning

Students will be connected with professionals in the health professions field. These professional connections may include interviews, field trips to local businesses and facilities, virtual field trips to other locations, presenting their learning and work samples to professionals, job shadowing and career coaching. It is expected that these experiences will lead to opportunities for direct job training and real-world experience in an internship opportunity prior to completion of the program. Students will create and maintain a portfolio of their experiences to document the development of their skills, including a professional resume**.**

Additional Learning Opportunities

- Micro-credentials: Students may pursue learning experiences and credentials over the four years leading to certifications depending on the requirements of the project that they are involved in. Some examples for this pathway include, but are not limited to:
    - OSHA 10 Hour General Industry Certification
    - Provider First Aid
    - Stop the Bleed
    - Cardiopulmonary resuscitation (CPR)
    - Automated external defibrillator (AED)
    - Foreign body airway obstruction (FBAO)

Pre-Requisites

HPP 100: Health Professions 100
HPP 200: Health Professions 200
HPP 300: Health Professions 300

Course Objectives

Upon completion of the course students will:

- Demonstrate knowledge of the organization of the human body.
- 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.
- Apply the concepts learned in the lecture to understand and analyze laboratory activities and observations.
- Demonstrate understanding of systems within Health Care Delivery.
- Obtain healthcare provider First Aid CPR, other certifications as needed and phlebotomy certifications.
- Complete job shadows and internship experiences.
- Demonstrate understanding of the health care profession through completion of a service project addressing a public health issue.

Grading

30% In-Class Activities
30% Laboratory Experiments
40% Quizzes/Tests

Integrated Academics

1 CTE Integrated English Credit

Concurrent College Enrollment

Onondaga Community College: Medical Terminology, Anatomy and Physiology

Equipment and Supplies

Equipment and Supplies

- **School will provide:** All necessary lab and classroom equipment.
- **Students will provide:** TBD

Textbooks

- Martini, Nath, Bartholomew. 2015. Fundamentals of Anatomy and Physiology, 10th edition.
- Marieb & Smith. 2016. Human Anatomy and Physiology Laboratory Manual (cat version), 12th edition.

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

Grading

30% In-Class Activities
20% Laboratory Experiments
50% Quizzes/Tests

Additional Course Policies

Attendance and Lateness

All rules regarding attendance and lateness will be followed according to the SCSD Code of Conduct. All absences will be counted as unexcused unless the school receives proper notification. Students must report to class on time or they will be marked late. If students have illegal absences or are late, they will receive a "0" for any assigned work, quizzes or tests missed during that period.

Make-up

It is the **student's** responsibility to make up any work missed due to an excused absence within 5 days of returning to school. This includes absences in which the student was not in school as well as missing a class due to participation in a sport, extracurricular activity and attending class trips or any other school event.

Time will be given in class to complete the activities and projects but any assignments not completed in class **must** be completed for homework. The items that are due for each assignment will be specified by the teacher during the lesson and posted on the board. It is the student's responsibility to complete and hand in assignments on time. Some activities and projects will be completed in groups and each person is responsible for taking notes and answering all conclusion questions. All assignments must be handed in when they are due. Failure to do so can result in a reduced grade or a zero for that assignment.

Quizzes and tests will be given throughout the course. The material covered on each test will based on the essential questions, vocabulary and content covered in each activity.

Lab Activity

If a student misses a class lab activity that cannot be made up during class time, an alternate or modified assignment may be given. In some cases, students will have to use classroom equipment to complete makeup assignments which will require that they come in after regular school hours. It is important that the makeup work is completed as soon as possible to keep up with the class material.

PLEASE NOTE: Not all lab activities can be made up. Some labs require extensive and complicated teacher preparation and some solutions and materials cannot be recreated.

Course Calendar

Quarter	Units of Study
1	• Introduction to Level 400 • Career goals, Personal Safety, and Service Project/Internship Preparation • Integumentary System • Skeletal System • Muscular System • Respiratory System
2	• Urinary System • Central Nervous System: Electrophysiology and Neurons • Professional Skills/Internship • Central Nervous System: Spinal Cord and Reflexes
3	• Central Nervous System: The Brain • Peripheral Nervous System: Sensory Pathways - Somatic Nervous System • Peripheral Nervous System: Autonomic Nervous System • Endocrine System • Cardiovascular System: Blood • Cardiovascular System: The Heart • Cardiovascular System: Blood Vessels and Regulation
4	• Immune System • Digestive System • Reproductive System • Professional Conduct and Certifications

Syracuse City School District
Career and Technical Education Program
Scope and Sequence
HPP 400 – Health Professions Level 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
Week 1 **Introduction to Level 400**	• What are the expectations for students during this course? • What terms are used to describe anatomical position? • How is use of academic/professional vocabulary and terms beneficial? • How do we learn about human structure and function? • How do I learn best? • What is the difference between memorization and understanding? • How is the human body organized? • How can directional terms and regional terms help describe location in the body? • Why are administrative systems important.	• Identify expectations for this course including: attendance, completion of assignments and labs, availability of additional supports, communication and problem solving. • Identity body planes, directional terms and body cavities and components of abdominal quadrants. • Demonstrate correct use of medical terminology. • Explain the role of human donor and virtual technology on the science of anatomy. • Identify levels of organization of the human body such as chemical, cellular, tissue, organ, systems, and organism. • Demonstrate the correct use of directional and regional terms. • Explain the role of systems, regulations, and best practices in administering health care.	• Student Reflection • Class Assignments • Quiz	**Career Ready Practices** CRP 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-BRD 2 **National Health Science Standards** Standard 1: Human Anatomy and Physiology 1.1	**ELA** 11-12R 1,4 11-12W 1,2,4,5 11-12SL 1,2,4,5 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-3 **Math**
Week 2-3 **Career goals, Personal Safety, and Service Project/Internship Preparation** **(Note: The service project may be integrated throughout the year)**	• How are career ready skills and practices demonstrated? • What are student goals for career and learning outcomes? • What certification and post-secondary education and experiences are necessary for specific career pathways of individual interest? • How do I apply for college or a specific job position? • What documents are needed for application	• Demonstrate application of career ready skills and practices. • Define personal short and long-term goals. • Articulate a vision for 2,5,10 years in the future. • Identify certifications and post-secondary education and experiences to support a career in this field. • Demonstrate proficiency on any outstanding certifications (such as OSHA 10, Healthcare Provider CPR, First Aid) • Compile information requested in college and/or employment applications. • Identify potential sources of financial aid and other support needed for post-secondary life. • Draft a college entrance essay or personal statement for employment.	• Written assignments and artifacts • Student presentations • Student performance • Student Project on Public Health Issue	**Career Ready Practices** **CPR 1,2,3,4,8,9,10** **Cluster Standards** **HL 2,3,4** **Pathway Standards** **HL -DIA 3** **National Health Science Standards** Standard2: Communication 2.1,2.2 Standard 4: Employability 4.1,4.2,4.3,4.4 Standard 7: Safety Procedures	**ELA** 11-12R 1,2,4,7 11-12W 2,3 11-12SL 1,2,3,4,5,6 11-12L 1,2,3,4,6 **Literacy** 11-12 RST 2,6,7,8 11-12 WHST 3,4,5,6 **Science** **Math**

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
	for college or job position? • How are applications completed and submitted for post-secondary education and training or employment? • What are potential sources of financial support? • How does a personal statement support an application? • How is a resume structured? • What is the role of references? • What is the importance of a professional social media presence? • How are employees' health, safety and well-being protected? • Why are internships beneficial? • How is an internship located and applied to? • How does an employee convey professionalism in the workplace? • How does an internship experience contribute to a professional portfolio? • How is an internship obtained? • How is an interview prepared for and conducted? • How do I demonstrate readiness for future employment? • What is the importance of good communication? • What does it mean to be a professional? • What is the role of an employee in this field?	• Update or develop a resume. • Request relevant references. • Update and refine professional employability portfolio and social media presence. • Summarize what current employees in the field recommend as best practices to protect physical and mental health. • Identify how to mitigate what might be personal physical and mental health challenges. • Demonstrate principles of body mechanics during patient care (ambulating, lifting, positioning). • Demonstrate appropriate use of personal protective equipment. • Demonstrate application of environmental safety such as applying ergonomics, safe operation of equipment. • Demonstrate compliance with all safety signs, symbols, and labels. • Apply principles of basic emergency response. • Explain the benefits of an internship. • Apply job search techniques to seek out, evaluate, and obtain internship opportunities. • Communicate with industry/potential employers through the internship application experience. • Explain the importance of professionalism and ethics in the workplace. • Communicate effectively both verbally and in writing. • Explain the importance of being prompt, being able to take directions and being motivated to accomplish assigned tasks. • Document experiences and work samples. • Demonstrate completion of any applications. • Create questions for a potential interview. • Critique other interviews and revise responses based on feedback. • Describe what employers seek in an employee. • Discuss professional standards and employability skills for roles within the health professions field.		7.2,7.3,7.4,7.5, Standard 8: Teamwork 8.2	

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 is the importance of critical thinking to solving problems? • What is the importance of teamwork? • What are current public health issues? • What are some important social issues of concern in the workplace? • How can interviews, observations, and experiences with professionals help build information to address a problem in public health. • How is a service project shared?	• Describe the communication process, the importance of listening and speaking skills and their relationship to job performance. • Describe the importance of good reading and writing skills and their relationship to job performance. • Present written and oral communication in a clear, concise, and effective manner, including explaining and justifying actions. • Explain the importance of critical thinking and how to solve problems. • Describe and demonstrate how to work in a team environment and how to be an effective leader. • Explain how to resolve conflicts with co-workers and supervisors. • Explain how to give and receive constructive criticism. • Demonstrate time-management skills in prioritizing tasks, following schedules, and performing goal-relevant activities in a way that produces efficient results. • Demonstrate punctuality, dependability, reliability, and responsibility in performing assigned tasks as directed. • Identify and describe various social issues of concern in the workplace. • Demonstrate application of creating questions, conducting interviews, and summarizing information. • Synthesize information from research. • Demonstrate effective communication, understanding of a public health issue, and potential solution through a service project.			
Week 4-5 **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?	• 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	• Lab Reports • Class Assignments • Discussions • Models • Simulations • Case Study Summary • Detailed Scientific Drawings • Quiz	**Career Ready Practices** CRP 1,2,4,7,8,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,3,4,7,8,9 11-12 WHST 2,4,5,6,7 **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
	• 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?	• 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 how the integumentary system provides physical protection against pathogens. • 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. • 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.		**National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**Math**
Week 6-7 **Skeletal System**	• 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	• 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	• Lab Reports • Class Assignments • Manikin Building • Discussions • Detailed Scientific Drawings • Models • Simulations • Case Study Summary • Quiz	**Career Ready Practices** CRP 1,2,4,7,8,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards**	**ELA** 11-12R 1,4 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **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
	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? • How does the skeletal system and muscular system work together to produce movement in the body?	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 and the action of osteoclasts and osteoblasts. • 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. • Explain how the muscular and skeletal systems work together to produce movement in the body.		HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	HS-LS1-2 **Math**
Week 7-8 **Muscular System**	• How do muscles assist with movement of the body and of substances around the body? • How do the structures and functions of the three types of muscle tissues compare? • How are muscle fibers and membranes	• Identify and describe the key components of the connective tissue framework of muscle and tendons. • Describe the 3 types of muscle tissue. • Describe the connection between nerves and muscles. • Identify all the major anatomical features of muscle cells/fibers and describe how each of these components function uniquely in driving excitation-contraction coupling.	• Lab Reports • Class Assignments • Manikin Building • Discussions • Models • Student Drawings • Simulations • Case Study Analysis • Research Report • Quizzes/Unit Test	**Career Ready Practices** CRP 1,2,4,7,8,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards**	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5,6,7 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,3,4,7,8,9 11-12 WHST 2,4,5,6,7 **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
	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?	• 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.		HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	HS-LS1-2 **Math**
Weeks 9-10 **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	• Describe the major functions of the respiratory system and protective features against pathogens, particles, and other hazards. • Describe the mechanics of breathing. • Differentiate between external and internal respiration.	• Lab Reports • Class Assignments • Manikin Buildings • Discussions • Models • Simulations • Case Study of Respiratory Disorder	**Career Ready Practices** CRP 1,2,4,7,8,8,11,12 **Cluster Standards** HL 1,3	**ELA** 9-10R 1,4 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,3,4,7,8,9

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
	and out of the respiratory system? • 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. • Describe how the circulatory and respiratory systems work together to maintain homeostasis.	• Quiz		11-12 WHST 2,4,5,6,7
				Pathway Standards HL-BRD 2,4 HL-DIA 1	**Science** HS-LS1-2 HS-LS1-3
				National Health Science Standards National Health Science Standards Standard 1: Academic Foundation 1.1,	**Math**

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 11-12 **Urinary System**	• What are the functions of the urinary system? • 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? • What roles do the respiratory, digestive and urinary systems play in excreting wastes from the body	• Describe the general structures and functions of the urinary system. • 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. • State that the nephron is the structural and functional unit of the kidney. • Differentiate between the terms filtration, reabsorption, and secretion with reference to urine production. • Recognize that urine is formed in the nephron and start with filtration. • Describe how some molecules are reabsorbed and some are secreted based on the needs of the body. • 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. • Explain how the urinary, respiratory and digestive systems function to remove specific wastes from the body.	• Lab Reports • Drawings/Models • Manikin Building • Class Assignments • Discussions • Simulations • Case Study Analysis • Quizzes/Unit Test	**Career Ready Practices** CRP 1,2,4,7,8,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12RST 1,2,3,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 HS-LS1-7 **Math**
Week 13-14 **Central Nervous System: Electrophysiology and Neurons**	• What are the major structures and functions of the nervous system? • How do the central nervous system and peripheral nervous	• Describe the structural and functional subdivisions of the nervous system including sensory/afferent, motor/efferent, interneurons, somatic, visceral/autonomic, central, and peripheral nervous systems.	• Lab Reports • Class Assignments • Discussions • Graphic Organizer • Simulations • Case Study Analysis	**Career Ready Practices** 1,2,4,7,8,9,11,12 **Cluster Standards**	**ELA** 11-12R 1,4,7 11-12W 1,2,4 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
	system work together to control the body? • 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 structure and function of the 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 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.	• Quiz/Tests	HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	11-12 RST 1,2,3,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 HS-LS1-3 **Math**

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 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.			
Weeks 15-19 **Professional Skills/Internship**	• 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 that investigates 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. • Participate in mock interviews to prepare for college admissions and job interviews.	• 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** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7
				Pathway Standards HL-BRD 1 HL-DIA 1	**Science**
				National Health Standards Standard 4: Employability 4.1,4.2,.4.3,.4.4	**Math**
Week 20 **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.	• Lab Reports • 3-D Models • Class Assignments • Graphic Organizer • Simulations • Case Study Analysis • Quiz/Tests	**Career Ready Practices** 1,2,4,7,8,11	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12L 1,2,3,6
				Cluster Standards HL 1,3	**Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7
				Pathway Standards HL-BRD 2,4 HL-DIA 1	**Science** HS-LS1-3
				National Health Science Standards National Health Science Standards Standard 1: Academic Foundation 1.1,	**Math**

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 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.			
Week 21 **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.	• Lab Reports • Class Assignments • Discussions • Models • Case Study Analysis • Unit Test	**Career Ready Practices** 1,2,4,7,8,11 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 **Math**

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
		• 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. • 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 22 **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	• Lab Reports • Class Assignments • Discussions • Student Created Diagrams • Models • Research Article Summary/Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-3 **Math**

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
		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.			
Week 23 **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.	• Lab Reports • Class Assignments • Discussions • Models • Simulations • Research Paper Summary/Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4,7 11-12W 1,2,4,5 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-3 **Math**
Week 24-25			• Lab Reports	**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
Endocrine System	• How does the structure of the lymphatic system relate to its function? • What is the relationship between antigen and antibody? • How does the immune system protect us both at the time of an infection and for the future? • How does your body react the second time it is exposed to a particular antigen? • How do vaccines provide life-long immunity? • What is an allergen and how does the immune system respond to one? • 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?	• Describe the structure and function of the lymphatic and immune system • Explain that antibodies are formed in response to an antigen. • Describe the interaction between antigens and antibodies. • Recognize that a B lymphocyte is a white blood cell that is responsible for producing antibodies and has the ability to remember invaders for the future. • Explain how a primary immune response differs from a secondary immune response. • Identify the contents of a vaccine. • Explain how a vaccine stimulates the immune system to provide life-long protection. • Describe what causes an allergic reaction in the human body. • 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. • 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.	• Class Assignments • Discussions • Simulations • Case Study Summary • Quizzes/Unit Test	CRP 1,2,4,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 HS-LS1-3 **Math**

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 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 26-27 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. • 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.	• Lab Reports • Class Assignments • Discussions • Models • Simulations • Case Study Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11,12	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6
				Cluster Standards HL 1,3	**Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7
				Pathway Standards HL-BRD 2,4 HL-DIA 1	**Science** HS-LS1-2
				National Health Science Standards National Health Science Standards Standard 1: Academic Foundation 1.1,	**Math**

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
		• Identify blood disorders in a given case study. • Diagnose sickle cell anemia and describe its causes and appropriate treatment using current medical research.			
Week 28-29 **Cardiovascular System: The Heart**	• What are the structures of the circulatory system? • What is the relationship between the heart and lungs? • What is the pathway of blood in and out of the heart in pulmonary and systemic circulation? • How do the structures of arteries, veins and capillaries relate to their function in the body? • How does the structure of the heart assist with 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 structures and functions of the circulatory system. • Explain the relationship between the heart and the lungs. • Identify the major arteries and veins of the circulatory system. • Trace blood flow in pulmonary and systemic circulation. • Name each chamber of the hears and trace blood flow through the heart. • 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. • Describe the valve names and compare/contrast the anatomical and physiological differences in the operation of the atrioventricular versus the semilunar valves. • 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	• Lab Reports • 3-D Models • Class Assignments • Graphic Organizer • Simulations • Case Study Summary • Quizzes/Unit Test	**Career Ready Practices** 1,2,4,7,8,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12L 1,2,3,6 **Literacy** 11-12RST 1,2,3,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 **Math**

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
		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.			
Week 30 **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, 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.	• Lab Reports • Class Assignments • Discussions • Detailed Scientific Drawings • Models • Simulations • Case Study Summary • Quizzes/Unit Test	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1 **Pathway Standards** HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 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 31-32 **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 the relationship between antigen and antibody? • How does the immune system protect us both at the time of an infection and for the future? • How does your body react the second time it is exposed to a particular antigen? • How do vaccines provide life-long immunity? • What is an allergen and how does the immune system respond to one? • 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?	• Describe the structure and function of the lymphatic and immune system • Explain that antibodies are formed in response to an antigen. • Describe the interaction between antigens and antibodies. • Recognize that a B lymphocyte is a white blood cell that is responsible for producing antibodies and has the ability to remember invaders for the future. • Explain how a primary immune response differs from a secondary immune response. • Identify the contents of a vaccine. • Explain how a vaccine stimulates the immune system to provide life-long protection. • Describe what causes an allergic reaction in the human body. • 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.	• Lab Reports • Class Assignments • Discussions • Models • Student Drawings • Simulations • Case Study Analysis • Quiz	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 **Math**

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 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 autoimmune disorders through the use of case studies.			
Week 33-34 **Digestive System**	• What are the resources the human body needs to survive? • What role do food, water and oxygen play in the human body? • What human body systems work to create, process or distribute the body's main power sources? • What structures make up the digestive system and what are their functions? • How does the structure of each digestive organ relate to its function? • What is the difference between chemical and mechanical digestion and where does each occur? • How do enzymes aid in the process of digestion? • How does the digestive system assist in maintaining the water balance in the body?	• Describe the classes of nutrients required by the body. • Identify and describe the human body systems that create, process, and distribute food, water, and oxygen. • Explain the role of food, water and oxygen in the human body. • Identify the structures and functions of the digestive system and its organs. • Define and differentiate the two types of digestive processes: mechanical and chemical. • Explain what is meant by absorption. • 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.	• Lab Reports • Class Assignments • Discussions • Models • Simulations • Manikin Building • Case Study Analysis • Quiz/Test	**Career Ready Practices** 1,2,4,7,8,9,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12RST 1,2,3,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 **Math**

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 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 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 35-37 **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?	• Identify and describe the major organs, glands, and tissues of the male reproductive system. • Recognize that the male gamete is called sperm and is produced in the testis. • State that testosterone is produced in the testis and explain its role in the human body. • Recognize that sperm is used to transfer genetic information to the female egg. • Recognize that the penis is used to deliver sperm to the female. • 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.	• Lab Reports • Class Assignments • Drawings/Models • Discussions • Simulations • Case Study Summary • Student Debates • Quizzes/Unit Test	**Career Ready Practices** 1,2,4,7,8,11,12 **Cluster Standards** HL 1,3 **Pathway Standards** HL-BRD 2,4 HL-DIA 1 **National Health Science Standards** National Health Science Standards Standard 1: Academic Foundation 1.1,	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** HS-LS1-2 **Math**

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 do feedback cycles play in menstrual cycle? • What is the process of fertilization and how does it occur? • How does the union of gametes ensure the maintenance of the diploid number? • What changes occur in the mother during pregnancy? • Where does fetal development occur? • What is the role of the placenta? • How does diffusion allow for gas and nutrient exchange between mother and embryo?? • What stages does the developing embryo go through during pregnancy • How does positive feedback contribute to labor and delivery? • What are examples of reproductive therapy?	• Identify and describe the major organs, glands, and tissues of the female reproductive system. • Recognize that the female gamete is produced in the ovary and is called an ovum (egg). • Explain the menstrual cycle in the female. • Recognize that feedback cycles are used to regulate the female reproductive cycle. • 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. • Explain that the union of haploid gametes results in a diploid zygote. • Recognize the fallopian tube as the site of fertilization in the female. • Recognize that the uterus is the site of implantation and development of the egg. • Describe the changes in the female reproductive cycle during pregnancy. • Explain the role of the placenta during fetal development. • Recognize that developing egg undergoes mitosis and differentiation during development. • Explain the role of diffusion in gas/nutrient exchange during development. • Explain the role of positive feedback during labor. • Describe the role of reproductive therapy through the use of case studies.			

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 38-40 **Professional Conduct and 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? • What is a phlebotomist? • What are the legal issues related to phlebotomy? • What are standard precautions and why should they always be used? • What are the different types of blood draws performed by phlebotomists? Why would each one be used? • What documentation is required during blood draws and specimen collection?	• 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. • Complete First Aid CPR Certification. • List the duties of a phlebotomist. • Define legal issues related to phlebotomy. • Describe the universal precautions as outlined by the CDC. • Describe the venous anatomy and veins and skin surfaces on which phlebotomy can be performed. • Differentiate between serum and plasma. • Identify factors to be considered in venipuncture or skin puncture site selection. • List the equipment and supplies needed to collect blood by venipuncture and skin puncture. • Describe 6 patient factors which influence the ability to perform venipuncture successfully. • Discuss 6 complications associated with blood collection. • Describe the steps in accurate specimen collection and documentation procedures. • Demonstrate a successful venipuncture on manikin arm.	• Portfolio • Peer Assessment • Supervisor Formal Evaluations • Practical Exams • Simulations • Students Demonstrations • Discussions • Student Reflections • Peer Review • First Aid CPR Certification	**Career Ready Practices** 1,2,4,5,7,8,10,11,12 **Cluster Standards** HL 2,5 **Pathway Standards** **National Health Science Standards** Standard 4: Employability Skills: 4.1,4.2, 4.4 Standard 5: Legal Responsibility 5.2 Standard 10: Technical Skills 10.2	**ELA** 11-12R 1,4,7 11-12W 1,2,4 11-12SL 1,2,3,4 11-12L 1,2,3,6 **Literacy** 11-12 RST 1,2,4,7,8,9 11-12 WHST 2,4,5,6,7 **Science** **Math**