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**2023 – 2024**

**PROGRAM GUIDE FOR:**

**HEALTH SCIENCE CLUSTER**

**AND MIDDLE SCHOOL**

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## Health Science Cluster Program Guide

The Health Science cluster provides students with essential knowledge and skills for pursuing careers in the following five pathways: Therapeutic Services, Diagnostic Services, Health Informatics, Support Services, and Biotechnology Research and Development. Rigorous and challenging content may include a variety of instructional strategies, work-based learning experiences, and simulation.

**\*\*Courses highlighted in yellow are shared with other clusters. See "Shared Courses" table on page 3 for additional details.**

Career Pathway Program	Health Science Program (Must teach three courses from this program list within two years)		
	The Health Science Program instructional content incorporates project- and problem-based healthcare practices and procedures to demonstrate knowledge and skills fundamental to a variety of healthcare careers. Knowledge and skills are reinforced and enhanced through co-curricular activities and participation in HOSA – Future Health Professionals and work-based learning opportunities that are age and grade appropriate.		
Course Number	Career Pathway Program Courses	Career Readiness Indicator (CRI)	In Demand Occupations
14002G1001	<b>Foundations of Health Science - Required prerequisite course/Health Education substitute</b>	<ul style="list-style-type: none"> <li>• BLS Instructor with Healthcare Provider</li> <li>• Certified Billing and Coding Specialist (CBCS)</li> <li>• Certified Clinical Medical Assistant (CCMA)</li> <li>• Certified EKG Technician (CET)</li> <li>• Certified Electronic Health Records Specialist (CEHRS)</li> <li>• Certified Medical Administrative Assistant (CMAA)</li> <li>• Certified Nursing Assistant (CNA)</li> <li>• Certified Pharmacy Technician (CPhT)</li> <li>• Certified Patient Care Technician (CPCT)</li> <li>• Elanco Veterinary Medical Applications Certification</li> <li>• Emergency Medical Dispatcher (EMD)</li> <li>• Lifeguard Certification (American Lifeguard Association or American Red Cross)</li> <li>• National Emergency Medical Responder (EMR)</li> <li>• National Emergency Medical Technician (EMT)</li> <li>• Public Safety Telecommunicator (Alabama Fire College)</li> </ul>	<ul style="list-style-type: none"> <li>• Clinical Laboratory Technologists &amp; Technicians</li> <li>• Dental Hygienists</li> <li>• Diagnostic Medical Sonographers</li> <li>• Licensed Practical Nurses</li> <li>• Medical Assistants</li> <li>• Medical Equipment Preparers</li> <li>• Medical &amp; Health Services Manager</li> <li>• Medical Secretaries</li> <li>• Nursing Assistants</li> <li>• Nurse Anesthetists</li> <li>• Nurse Practitioners</li> <li>• Occupational Therapy Assistants</li> <li>• Ophthalmic Medical Technicians</li> <li>• Pharmacists</li> <li>• Pharmacy Technicians</li> <li>• Phlebotomists</li> <li>• Physical Therapists</li> <li>• Physical Therapy Assistants</li> <li>• Psychiatric Technicians</li> <li>• Radiologic Technologists</li> <li>• Registered Nurses</li> <li>• Respiratory Therapists</li> <li>• Speech-Language Pathologists</li> <li>• Surgical Technologists</li> <li>• Veterinary Assistants &amp; Laboratory Animal Caretakers</li> </ul>
14297G1000	Advanced Health Seminar		
14999G1000	CTE Lab in Health Science		
14054G1000	Dental Assisting		
14149G1000	Diagnostic Services		
14055G1000	Emergency Services and Management		
14062G1005	Exercise Prescription Physiology		
19259G0500	Family Wellness (1/2 credit) – Health Education substitute		
15055G1000	Forensic Science and Crime Scene Investigation - Science credit eligible		
14157G1000	Health Informatics		
14251G0500	Health Promotion and Wellness (1/2 credit)		
14298G1000	Health Science Internship*, 1 credit option (Content Standards 1, 3, 4, 5, 6, and 9), 11 <sup>th</sup> or 12 <sup>th</sup> grade		
14298G2000	Health Science Internship*, 2 credit option (Content Standards 1-11). 11 <sup>th</sup> or 12 <sup>th</sup>		
14299G1001	Human Body Structures and Functions – Science credit eligible		
14252G1001	Introduction to Biotechnology -Science credit eligible		
14152G1000	Introduction to Pharmacy		
18105G1012	Introduction to Veterinary Sciences		
14062G1004	Kinesiology and Biomechanics		
14156G1000	Medical Coding		
14154G1000	Medical Terminology		
14051G2000	Nurse Aide Training (11 <sup>th</sup> or 12 <sup>th</sup> grade only)		
14254G1000	Nutrition in Healthcare		
14056G1000	Operating Room Foundations		
14002G1002	Orientation to Health Science		
14051G1000	Patient Care Technician		
14152G1001	Pharmacy Technician		
17049G1000	Safety and Health Regulations		
14997G1000	Senior Career Pathway Project- Health Science		
14062G1002	Sports Medicine Advanced (11 <sup>th</sup> or 12 <sup>th</sup> grade)		
14062G1003	Sports Medicine Fundamentals		
14062G1001	Sports Medicine Intermediate		
14202G1000	Support Services		
14099G1000	Therapeutic Services		
18105G1022	Veterinary Science		

\* Successful completion of one credit (minimum) in Health Science coursework is required prior to placement of a student in a clinical/internship. A program receiving a waiver for the Foundations of Health Science prerequisite is **not** exempt from the requirement. Please refer to the Internship manual for forms and contracts to be used with LEA board approval.

<b>PLTW Biomedical Science Program</b>			
<b>Career Pathway Program</b>	The PLTW Biomedical Science program curriculum allows students to investigate the roles of biomedical professionals as they study the concepts of human medicine, physiology, genetics, microbiology, and public health. Knowledge and skills are reinforced and enhanced through participation in HOSA – Future Health Professionals and project-based learning opportunities that are age and grade appropriate. (Contact PLTW for additional information. This is a purchased curriculum.)		
<b>Course Number</b>	<b>Career Pathway Program Courses</b>	<b>Career Readiness Indicator (CRI)</b>	<b>In Demand Occupations</b>
14255G1000	Biomedical Innovation	<ul style="list-style-type: none"> <li>• BLS Instructor with Healthcare Provider</li> <li>• Certified Billing and Coding Specialist (CBCS)</li> <li>• Certified Clinical Medical Assistant (CCMA)</li> <li>• Certified EKG Technician (CET)</li> <li>• Certified Electronic Health Records Specialist (CEHRS)</li> <li>• Certified Medical Administrative Assistant (CMAA)</li> <li>• Certified Nursing Assistant (CNA)</li> <li>• Certified Pharmacy Technician (CPhT)</li> <li>• Certified Patient Care Technician (CPCT)</li> <li>• Emergency Medical Dispatcher (EMD)</li> <li>• Lifeguard Certification (American Lifeguard Association or American Red Cross)</li> <li>• National Emergency Medical Responder (EMR)</li> <li>• National Emergency Medical Technician (EMT)</li> <li>• Public Safety Telecommunicator (Alabama Fire College)</li> </ul>	<ul style="list-style-type: none"> <li>• Clinical Laboratory Technologists &amp; Technicians</li> <li>• Dental Hygienists</li> <li>• Diagnostic Medical Sonographers</li> <li>• Licensed Practical Nurses</li> <li>• Medical Assistants</li> <li>• Medical Equipment Preparers</li> <li>• Medical &amp; Health Services Manager</li> <li>• Medical Secretaries</li> <li>• Nursing Assistants</li> <li>• Nurse Anesthetists</li> <li>• Nurse Practitioners</li> <li>• Occupational Therapy Assistants</li> <li>• Ophthalmic Medical Technicians</li> <li>• Pharmacists</li> <li>• Pharmacy Technicians</li> <li>• Phlebotomists</li> <li>• Physical Therapists</li> <li>• Physical Therapy Assistants</li> <li>• Psychiatric Technicians</li> <li>• Radiologic Technologists</li> <li>• Registered Nurses</li> <li>• Respiratory Therapists</li> <li>• Speech-Language Pathologists</li> <li>• Surgical Technologists</li> <li>• Veterinary Assistants &amp; Laboratory Animal Caretakers</li> </ul>
14299G1002	Human Body Systems - Science credit eligible		
14001G0608	Medical Detectives (PLTW Middle Level Course)		
14299G1003	Medical Interventions		
14252G1002	Principles of the Biomedical Sciences		

**2023-2024 Subject and Personnel Codes**  
**Health Science Cluster and Health Science Middle School Program**

<b>Health Science Cluster Courses</b>			
<b>Course Number</b>	<b>Course Name</b>	<b>Course Number</b>	<b>Course Name</b>
14297G1000	Advanced Health Seminar	14062G1004	Kinesiology and Biomechanics
14999G1000	CTE Lab in Health Science	14156G1000	Medical Coding
14054G1000	Dental Assisting	14154G1000	Medical Terminology
14149G1000	Diagnostic Services	14051G2000	Nurse Aide Training (11 <sup>th</sup> or 12 <sup>th</sup> grade only)
14055G1000	Emergency Services and Management	14254G1000	Nutrition in Healthcare
14062G1005	Exercise Prescription Physiology	14056G1000	Operating Room Foundations
19259G0500	Family Wellness (½ credit) - Health Education substitute	14002G1002	Orientation to Health Science
15055G1000	Forensic Science and Crime Scene Investigation - Science credit eligible	14051G1000	Patient Care Technician
14002G1001	<b>Foundations of Health Science – Required prerequisite course/Health Education substitute</b>	14152G1001	Pharmacy Technician
14157G1000	Health Informatics	17049G1000	Safety and Health Regulations
14251G0500	Health Promotion and Wellness (½ credit)	14997G1000	Senior Career Pathway Project- Health Science
14298G1000	Health Science Internship 1 credit option (Content Standards 1, 3, 4, 5, 6, and 9), 11 <sup>th</sup> or 12 <sup>th</sup> grade	14062G1003	Sports Medicine Fundamentals
14298G2000	Health Science Internship, 2 credit option (Content Standards 1-11), 11 <sup>th</sup> or 12 <sup>th</sup>	14062G1001	Sports Medicine Intermediate
14299G1001	Human Body Structures and Functions - Science credit eligible	14062G1002	Sports Medicine Advanced (11 <sup>th</sup> or 12 <sup>th</sup> grade)
14252G1001	Introduction to Biotechnology - Science credit eligible	14202G1000	Support Services
14152G1000	Introduction to Pharmacy	14099G1000	Therapeutic Services
18105G1012	Introduction to Veterinary Sciences	18105G1022	Veterinary Science

<b>PLTW Biomedical Science Cluster Courses</b>			
<b>Course Number</b>	<b>Course Name</b>	<b>Course Number</b>	<b>Course Name</b>
14255G1000	Biomedical Innovation	14299G1003	Medical Interventions
14299G1002	Human Body Systems - Science credit eligible	14252G1002	Principles of the Biomedical Sciences
14001G0608	Medical Detectives (PLTW Middle Level Course)		

<b>Health Science Middle School Program Courses</b>	
The Health Science Middle School Program instructional content is designed to allow students to explore careers, terminology, basic skills, and technologies associated with each pathway in the Health Science career cluster. Knowledge and skills are reinforced and enhanced through participation in HOSA – Future Health Professionals and project-based learning opportunities that are age and grade appropriate.	
<b>Course Number</b>	<b>Course Name</b>
22151G0608	Career Explorations
14001G0635	Health Explorations (35 instructional hour course) (Content Standards 1-4)
14001G0670	Health Explorations (70 instructional hour course) (Content Standards 1-6)
14001G0640	Health Explorations (140 instructional hour course) (All Content Standards)
14002G0670	Introduction to Careers in Healthcare (70 instructional hour course) (Content Standards 1-6)
14002G0608	Introduction to Careers in Healthcare (140 instructional hour course) (All Content Standards)
14001G0608	Medical Detectives (PLTW)

<b>Shared Courses</b>			
<b>Course Number</b>	<b>Course Name</b>	<b>Cluster(s)</b>	<b>Required Year to Implement COS</b>
22151G0608	Career Cluster Explorations	Agriculture, Food and Natural Resources Business, Management, and Administration Law, Public Safety, Corrections and Security	2021-2022
14055G1000	Emergency Services and Management	Law, Public Safety, Corrections and Security	2021-2022
19259G0500	Family Wellness (½ credit)	Human Services	2008-2009
15055G1000	Forensic Science and Crime Scene Investigation	Law, Public Safety, Corrections and Security	2021-2022
18105G1012	Introduction to Veterinary Sciences	Agriculture, Food and Natural Resources	2021-2022
17049G1000	Safety and Health Regulations	Architecture and Construction Manufacturing Transportation, Distribution and Logistics	2022-2023
18105G1022	Veterinary Science	Agriculture, Food and Natural Resources	2021-2022

## College and Career Readiness Indicator Course Matrix

Program Name	Health Science	PLTW Biomedical Science
<b>Foundation Course(s)</b>	Foundations of Health Science	
<b>Concentrator Course(s)</b>	Advanced Health Seminar Biomedical Innovation (PLTW) Dental Assisting Diagnostic Services Emergency Services and Management Exercise Prescription and Physiology Forensic Science and Crime Scene Investigation Health Informatics Human Body Structures and Functions Human Body Systems (PLTW) Introduction to Biotechnology Introduction to Pharmacy Introduction to Veterinary Sciences Kinesiology and Biomechanics Medical Coding	Medical Interventions (PLTW) Medical Terminology Nurse Aide Training Nutrition in Healthcare Operating Room Foundations Orientation to Health Science Patient Care Technician Pharmacy Technician Principles of the Biomedical Sciences (PLTW) Safety and Health Regulations Sports Medicine Fundamentals Sports Medicine Intermediate Sports Medicine Advanced Support Services Therapeutic Services Veterinary Science
<b>Capstone Course(s)</b>	CTE Lab in Health Science Health Science Internship Senior Career Pathway Project- Health Science	

To meet the CCR Indicator as a CTE completer, a student must earn three (3.0) credits with the grade of a “C” or higher in CTE courses that are part of an approved CTE program of study. Additional requirements are outlined in [Memorandum FY22-2065](#).

This matrix is intended for general guidance on the CCR completer status and is subject to change. For all CTE programming information, please refer to the CTE Cluster specific Program Guide. It contains a list of approved CTE programs, valid course numbers, required prerequisite courses, approved Career Readiness Indicators (CRIs) and in demand occupations.

**\*Courses are listed in alphabetical order, not in sequential order.**