2024 Healthcare and Clinical Services

Program CIP: 51.0000 – Health Services/Allied Health/Health Sciences, General.

Direct inquiries to:

Project Manager	Program Supervisor
Research and Curriculum Unit	Office of Career and Technical Education
P.O. Drawer DX	Mississippi Department of Education
Mississippi State, MS 39762	P.O. Box 771
662.325.2510	Jackson, MS 39205
helpdesk@rcu.msstate.edu	601.359.3974

Published by:

Office of Career and Technical Education	Research and Curriculum Unit
Mississippi Department of Education	Mississippi State University
Jackson, MS 39205	Mississippi State, MS 39762

The Research and Curriculum Unit (RCU), located in Starkville, as part of Mississippi State University (MSU), was established to foster educational enhancements and innovations. In keeping with the land-grant mission of MSU, the RCU is dedicated to improving the quality of life for Mississippians. The RCU enhances the intellectual and professional development of Mississippi students and educators while applying knowledge and educational research to the lives of the people of the state. The RCU works within the contexts of curriculum development and revision, research, assessment, professional development, and industrial training.

Table of Contents

Acknowledgments

Appreciation is expressed to the following professionals who provided guidance and insight throughout the development process:

Standards

Standards and alignment crosswalks are referenced in the appendices. Depending on the curriculum, these crosswalks should identify alignment to the standards mentioned below, as well as possible related academic topics as required in the Subject Area Testing Program in Algebra I, Biology I, English II, and U.S. History from 1877, which could be integrated into the content of the units. Mississippi's CTE healthcare and clinical services is aligned to the following standards:

National Health Science Standards
The National Health Science Standards were developed by the National Consortium on Health Science Education. These standards "provide a clear and consistent understanding of industry and postsecondary expectations for health science teachers and students." The standards are designed to help prepare students to be college and/or career ready by giving them the essential knowledge and skills common across most health professions.
healthscienceconsortium.org/national-health-science-standards

International Society for Technology in Education Standards (ISTE)
Reprinted with permission from *ISTE Standards for Students* (2016). All rights reserved. Permission does not constitute an endorsement by ISTE (iste.org).

College- and Career-Readiness Standards
College- and career-readiness standards emphasize critical thinking, teamwork, and problem-solving skills. Students will learn the skills and abilities demanded by the workforce of today and the future. Mississippi adopted Mississippi College- and Career-Readiness Standards (MCCRS) to provide a consistent, clear understanding of what students are expected to learn and so teachers and parents know what they need to do to help them.
mdek12.org/oae/college-and-career-readiness-standards

Framework for 21st–Century Learning
In defining 21st–century learning, the Partnership for 21st–Century Skills has embraced key themes and skill areas that represent the essential knowledge for the 21st–century: global awareness; financial, economic, business, and entrepreneurial literacy; civic literacy; health literacy; environmental literacy; learning and innovation skills; information, media, and technology skills; and life and career skills.
battelleforkids.org/networks/p21/frameworks-resources

Preface

Secondary CTE programs in Mississippi face many challenges resulting from sweeping educational reforms at the national and state levels. Schools and teachers are increasingly being held accountable for providing applied learning activities to every student in the classroom. This accountability is measured through increased requirements for mastery and attainment of competency as documented through both formative and summative assessments. This document provides information, tools, and solutions that will aid students, teachers, and schools in creating and implementing applied, interactive, and innovative lessons. Through best practices, alignment with national standards and certifications, community partnerships, and a hands-on, student-centered concept, educators will be able to truly engage students in meaningful and collaborative learning opportunities.

The courses in this document reflect the statutory requirements as found in Section 37-3-49, *Mississippi Code of 1972*, as amended (Section 37-3-46). In addition, this curriculum reflects guidelines imposed by federal and state mandates (Laws, 1988, Ch. 487, §14; Laws, 1991, Ch. 423, §1; Laws, 1992, Ch. 519, §4 eff. from and after July 1, 1992; Strengthening Career and Technical Education for the 21st Century Act, 2019 [Perkins V]; and Every Student Succeeds Act, 2015).

Mississippi Teacher Professional Resources

The following are resources for Mississippi teachers:

        Curriculum, Assessment, Professional Learning
                Program resources can be found at the RCU's website, rcu.msstate.edu.
        Learning Management System: An Online Resource
                Learning management system information can be found at the RCU's website,
                under Professional Learning.

Should you need additional instructions, contact the RCU at 662.325.2510 or
helpdesk@rcu.msstate.edu.

Executive Summary

Pathway Description

Healthcare and clinical services (HCCS) is a second-course option for students in the Health Science Career Cluster, with Health Science Core as the prerequisite. The HCCS course includes classroom and hands-on experience that will provide students with an understanding of the healthcare sector, as outlined according to the Health Science Career Cluster in the National Career Clusters Framework and the National Consortium on Health Science Education. Through a blend of theoretical and practical experience, HCCS plays a crucial role in preparing students for careers within the healthcare industry.

The HCCS program requires a minimum of 100 hours of clinical-type experience to be obtained by completion of the program. These hours can be documented in a digital or physical portfolio. It is recommended to spread these hours over the length of the program by giving students multiple opportunities to complete hours in the Health Science Core class. The remaining number of hours not obtained by the student in the Health Science Core class should be obtained by completion of the HCCS class. This clinical-type experience can include tours of healthcare facilities, guest speakers, participation in health fairs or health-related community service, laboratory and skills practice, classroom demonstrations, and observation or job shadowing experiences in various healthcare settings. Videos do not count toward this 100-hour requirement unless they are used in conjunction with hands-on training or classroom instruction. (e.g., CPR). The HCCS program also requires 35 of the 100 hours be recorded on the state-adopted digital portfolio platform. These 35 hours must meet the level four requirements detailed in the Mississippi Work-Based Learning Manual. The 35 hours are not in addition to the 100 program hours in HCCS; rather, the 35 hours should be included in the 100 total hours required for program completion.

College, Career, and Certifications

By implementing the standards set forth in the HCCS curriculum, students who successfully master the material should have the necessary skills and fundamental knowledge to be successful in any healthcare career field. Students who complete this program will also have a great advantage in any postsecondary education they may choose. In addition, students whose programs meet additional criteria and approval by their respective agencies can earn certifications that could help them in the future or even allow them to work in a healthcare setting. Various certifications available include nurse assistant/aid, CPR, phlebotomist, pharmacy technician, patient care technician, and others.

Grade Level and Class Size Recommendations

It is recommended that students enter this program as freshmen, sophomores, or juniors. Exceptions to this are a district-level decision based on class size, enrollment numbers, student maturity, and CTE delivery method. Scheduling and/or operating more than one course in the same classroom/laboratory with the same teacher is not recommended. To enable the teacher to instruct students in skills on a one-on-one basis and to ensure all students have a good opportunity to job shadow/intern as much as possible, the recommended class size is no more than 12-15 students for this course. Please be aware that health care facilities often require no more than a 10-to-1 student/teacher ratio to participate in job shadowing. Having a class that is

too large decreases the quality experience that the health science core curriculum is meant to be for the student.

Student Prerequisites

For students to experience success in the program, the following student prerequisites are suggested:

1. C or higher in English (the previous year)
2. C or higher in high school–level math (last course taken or the instructor can specify the level of math instruction needed)
3. C or higher in biology (or last science taken as approved by instructor)
4. Instructor approval and Test of Adult Basic Education (TABE) reading score (eighth grade or higher)

or

1. TABE reading and math score (eighth grade or higher)
2. Instructor approval

or

1. Instructor approval

Assessment

The latest assessment blueprint for the curriculum can be found at rcu.msstate.edu/curriculum.

Applied Academic Credit

The latest academic credit information can be found at mdek12.org/ese/approved-course-for-the-secondary-schools.

Teacher Licensure

The latest teacher licensure information can be found at mdek12.org/oel/apply-for-an-educator-license.

Professional Learning

If you have specific questions about the content of any training sessions provided, please contact the RCU at 662.325.2510 or helpdesk@rcu.msstate.edu.

Course Outlines

Option One—Two 1-Carnegie Unit Courses

This curriculum consists of two 1-credit courses, which should be completed in the following sequence:

1. **Healthcare and Clinical Services I—Course Code: 995104**
2. **Healthcare and Clinical Services II—Course Code: 995105**

Course Description: Healthcare and Clinical Services I
The HCCS I course introduces students to many of the basic medical skills that all healthcare professionals must possess. In this course, students review necessary safety procedures and receive an overview of human development. Students then move into emergency services, learning skills related to basic life support, first aid, and how to record and interpret vital signs. Students then jump back into the various services/fields in healthcare, learning about careers and various skills in each area, with units on medical services and nursing services.

Course Description: Healthcare and Clinical Services II
The HCCS II course continues the exploration of careers and skills in various healthcare fields. The course begins with time spent learning about respiratory and laboratory services, as well as an introduction to medical imaging and healthcare administration. After that, students learn about other areas vital to a nursing career including mental health services, sports medicine, pharmacology, and rehabilitative services. Students finish the course with a Clinical Capstone Project, in which students continue to develop the skills and knowledge necessary for patient-centered care. Hours entered and recorded in this project can contribute to the state-approved work-based learning requirements and serve as a meaningful culmination to a student's learning and growth throughout the two courses.

Healthcare and Clinical Services I—Course Code: 995104

Unit	Unit Name	Hours
1	Course Orientation and Safety Review	7
2	Employment Preparation and Embedded Work-based Learning	10
3	Human Growth and Development	12
4	Nutrition and Dietetics	7
5	Emergency Services	16
6	First Aid	18
7	Vital Signs	16
8	Medical Services	20
9	Nursing Services	34
Total		140

Healthcare and Clinical Services II—Course Code: 995105

Unit	Unit Name	Hours
10	Respiratory Care Services	9
11	Laboratory Services	10
12	Medical Imaging Services	6
13	Healthcare Administration	7
14	Mental Health Services	16
15	Sports Medicine	10
16	Rehabilitative Services	20
17	Pharmacology	12
18	Clinical Capstone Project	50
Total		140

Option Two—One 2-Carnegie Unit Course

This curriculum consists of one 2-credit course:

1. **Healthcare and Clinical Services—Course Code: 995101**

Course Description: Healthcare and Clinical Services
The HCCS course introduces students to many of the basic medical skills that all healthcare professionals must possess. Students review necessary safety procedures and receive an overview of human development, then move into emergency services, learning skills related to basic life support, first aid, and how to record and interpret vital signs. The students then jump back into the various services/fields in healthcare, learning about careers and various skills in each area, with units on medical services and nursing services. Students continue their learning with units on respiratory and laboratory services and receive an introduction to medical imaging and healthcare administration. Following that, students learn about other areas vital to a nursing career including mental health services, sports medicine, pharmacology, and rehabilitative services. Students finish the course with a Clinical Capstone Project, in which students continue to develop the skills and knowledge necessary for patient-centered care. Hours entered and recorded in this project can contribute to the state-approved work-based learning requirements and serve as a meaningful culmination to a student's learning and growth throughout the two courses.

Healthcare and Clinical Services — Course Code: 995101

Unit	Unit Name	Hours
1	Course Orientation and Safety Review	7
2	Employment Preparation and Embedded Work-based Learning	10
3	Human Growth and Development	12
4	Nutrition and Dietetics	7
5	Emergency Services	16
6	First Aid	18
7	Vital Signs	16
8	Medical Services	20
9	Nursing Services	34
10	Respiratory Care Services	9
11	Laboratory Services	10
12	Medical Imaging Services	6
13	Healthcare Administration	7
14	Mental Health Services	16
15	Sports Medicine	10
16	Rehabilitative Services	20
17	Pharmacology	12
18	Clinical Capstone Project	50
Total		280

Career Pathway Outlook

Overview

The Health Science pathway covers the broad field of occupations related to healthcare and medicine. Healthcare is one of the top five fastest-growing industries and one of the largest in the United States. Health science–related occupations such as nurse practitioner will generate up to 40% more new jobs than any other industry in the coming years according to the U.S. Bureau of Labor Statistics. In fact, three of the 20 fastest-growing occupations in America are related to healthcare. Employment in home healthcare and nursing and residential care should increase rapidly as life expectancies rise and families need assistance caring for elderly family members and thus rely more on long-term care facilities. New technologies will continue to enable earlier diagnoses of many diseases, which often increases the ability to treat conditions that were previously terminal. Industry growth will also occur because of the shift from inpatient to less expensive outpatient and home healthcare because of improvements in diagnostic testing and surgical procedures, along with patients' desires to be treated at home. Rapid growth is expected for workers in occupations concentrated outside the inpatient hospital sector, such as physical and occupational therapists and personal and home health workers. Traditional inpatient hospital positions are no longer the only option for many future healthcare workers. The Health Science pathway focuses on public health, health education, healthcare administration, or occupational health and safety. A shortlist of careers that this pathway focuses on contains positions like dietician, emergency medicine paramedic, licensed practitioner nurse (LPN), occupational therapist, physical therapist, pharmacist, physician assistant, and registered nurse (RN) among countless others. Health science professionals work in hospitals, dental offices and laboratories, and government and private research centers. They also work within pharmaceutical and biotechnology companies, the community in general and within public agencies, large healthcare organizations, and so on.

The Health Science pathway will target careers at the professional and technical levels in healthcare. Students enrolled in these courses should be well prepared to pursue degrees at both the two- and four-year college levels.

Needs of the Future Workforce

Throughout 2022, the healthcare and social assistance national market added an average of 47,000 jobs per month and the pay increased by nearly 4.5% according to the U.S. Bureau of Labor Statistics. In Mississippi, the average employment growth total from 2020 to 2030, is projected to increase by 9.5% for all general occupations combined. The data given in Table 1.1 below, including the average hourly earnings, was compiled from the Mississippi Department of Employment Security in 2022.

Table 1.1: Current and Projected Occupation Report

Description	Jobs, 2020	Projected Jobs, 2030	Change (Number)	Change (Percent)	Average Hourly Earnings, Year
Athletic Trainers	260	310	50	19.2%	$24.07, 2022
Clinical Laboratory Technologists and Technicians	3,360	3,720	360	10.7%	$21.84, 2022
Dentists (General)	690	740	50	7.2%	$77.74, 2022
Diagnostic Medical Sonographers	680	800	120	17.6%	$30.72, 2022
Dietitians and Nutritionists	730	850	120	16.4%	$21.15, 2022
Emergency Medical Technicians and Paramedics	2,580	3,050	470	18.2%	$20.09, 2022
Exercise Physiologists	2,360	2,600	240	10.2%	$23.07, 2022
Family Medicine Physicians	940	1,100	160	17.0%	$100.58, 2022
Home Health and Personal Care Aides	19,130	25,200	6,070	31.7%	$10.77, 2022
Licensed Practical and Licensed Vocational Nurses	9,520	11,040	1,520	16%	$19.97, 2022
Medical Assistants	3,660	4,480	820	22.4%	$15.21, 2022
Medical Dosimetrists, Medical Records Specialists, and Health Technologists and Technicians	3,440	3,860	420	12.2%	$18.27, 2022
Nurse Practitioner	3,710	4,790	1,080	29.1%	$53.73, 2022
Registered Nurses	29,270	33,220	3,950	13.5%	$30.35, 2022
Nursing Assistants	12,840	15,350	2,510	19.5	$12.35, 2022
Nursing Instructors and Teachers, Postsecondary	600	750	150	25%	$36.09, 2022
Occupational Therapists	850	1,030	180	21.2%	$42.03, 2022
Occupational Therapy Assistants	290	400	110	37.9%	$28.93, 2022
Pharmacists	2,590	2,750	160	6.2%	$57.33, 2022
Pharmacy Technicians	3,600	4,200	600	16.7%	$16.57, 2022
Phlebotomists	1,170	1,420	250	21.4%	$16.34, 2022
Physical Therapist Assistants	850	1,090	240	28.2%	$26.35, 2022
Physical Therapists	1,580	1,940	360	22.8%	$46.15, 2022
Physician Assistants	290	380	90	31%	$35.85, 2022
Respiratory Therapists	1,460	1,780	320	21.9%	$25.03, 2022

Speech-Language Pathologists	1,410	1,810	400	28.4%	$33.38, 2022
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	1,960	2,300	340	17.3%	$20.59, 2022
Veterinarian	640	760	120	18.8%	$49.01, 2022
Veterinary Assistants and Laboratory Animal Caretakers	770	910	140	18.2%	$12.09, 2022
Veterinary Technologists and Technicians	400	460	60	15%	$13.61, 2022

Source: Mississippi Department of Employment Security; mdes.ms.gov (2022).

Perkins V Requirements and Academic Infusion
The HCCS curriculum meets Perkins V requirements of introducing students to and preparing them for high-skill, high-wage occupations in health science fields. It also offers students a program of study, including both secondary and postsecondary, that will further prepare them for healthcare industry careers. Additionally, this curriculum is integrated with academic college- and career-readiness standards. Last, it focuses on ongoing and meaningful professional development for teachers as well as relationships with industry.

Transition to Postsecondary Education
The latest articulation information for secondary to postsecondary can be found at the Mississippi Community College Board website, mccb.edu.

Best Practices

Innovative Instructional Technologies
Classrooms should be equipped with tools that will teach today's digital learners through applicable and modern practices. The HCCS educator's goal should include teaching strategies incorporating current technology. To make use of the latest online communication tools—wikis, blogs, podcasts, and social media platforms, for example—the classroom teacher is encouraged to use a learning management system that introduces students to education in an online environment and places more of the responsibility of learning on the student.

Differentiated Instruction
Students learn in a variety of ways, and numerous factors—students' background, emotional health, and circumstances, for example—create unique learners. By providing various teaching and assessment strategies, students with various learning preferences can have more opportunities to succeed.

CTE Student Organizations
Teachers should investigate opportunities to sponsor a student organization. Several here in Mississippi will foster the types of learning expected from the CTE curriculum. Future Health Professionals (HOSA) is the approved CTSO for this pathway. Student organizations provide participants and members with growth opportunities and competitive events. They also open the doors to the world of industry careers and scholarship opportunities.

Cooperative Learning
Cooperative learning can help students understand topics when independent learning cannot. Therefore, you will see several opportunities in the HCCS curriculum for group work. To function in today's workforce, students need to be able to work collaboratively with others and solve problems without excessive conflict. The HCCS curriculum provides opportunities for students to work together and help each other complete complex tasks. There are many field experiences within the HCCS curriculum that will allow and encourage collaboration with professionals currently in the healthcare field.

Work-Based Learning
Work-based learning is an extension of understanding competencies taught in the HCCS classroom. The HCCS program requires students to obtain a minimum of 35 clinical-type hours, which may include but is not limited to, clinicals or worksite field experiences, entrepreneurships, internships, pre-apprenticeships, school-based enterprises, job placements, and simulated worksites. These real-world connections and applications provide a link to all types of students regarding knowledge, skills, and professional dispositions. Thus, supervised collaboration and immersion into the healthcare industry are keys to students' success, knowledge, and skills development. For more information on embedded work-based learning, visit the Mississippi Work-Based Learning Manual on the RCU website, rcu.msstate.edu.

Professional Organizations

<u>National Organizations</u>
American Cancer Society
cancer.org

Association of Career and Technical Education
acteonline.org

American Association for Respiratory Care
aarc.org

American Dental Assistants Association
dentalassistant.org

American Dental Association
ada.org

American Healthcare Association
ahca.org

American Heart Association
heart.org

American Hospital Association
aha.org

American Medical Association
ama-assn.org

American Red Cross-National Headquarters
redcross.org

American Society of Radiologic Technologists
asrt.org

American Health Information Management Association—AHIMA
ahima.org

American Lung Association
lung.org

American Nurses Association
nursingworld.org

American Speech-Language-Hearing Association

asha.org

American School Health Association
ashaweb.org

American Association for Men in Nursing
aamn.org

Association of Allied Health Programs
asahp.org

Association for Healthcare Documentation Integrity
ahdionline.org

Association for Professionals in Infection Control and Epidemiology
apic.org

Center for Health and Healthcare in Schools
healthinschools.org

Health Professions Network
healthpronet.org

Hospital Corporation of America
hcahealthcare.com

International Society for Technology in Education
iste.org

National Association of Emergency Medical Technicians
naemt.org

National Athletic Trainer's Association
nata.org

National Health Council
nationalhealthcouncil.org

Ovarian Cancer National Alliance
ovariancancer.org

Society of Nuclear Medicine & Molecular Imaging
snmmi.org

State-Level Organizations
Mississippi Nurses Association
msnurses.org

The Diabetes Foundation of Mississippi
msdiabetes.org

Mississippi Office of Healthy Schools — A Division of MDE
healthisacademic.org

Websites for Specific Groups
 Nurses for a Healthier Tomorrow
nursesource.org

Nurse.com
nurse.com

Using This Document

Competencies and Suggested Objectives
A competency represents a general concept or performance that students are expected to master as a requirement for satisfactorily completing a unit. Students will be expected to receive instruction on all competencies. The suggested objectives represent the enabling and supporting knowledge and performances that will indicate mastery of the competency at the course level.

Teacher Resources
All teachers should request to be added to the Canvas Teacher Resource Guide for their course. For questions or to be added to the guide, send a Help Desk ticket to the RCU by emailing helpdesk@rcu.msstate.edu.

Perkins V Quality Indicators and Enrichment Material
Some of the units may include an enrichment section at the end. This material will greatly enhance the learning experiences of students. If the Health Science program is using a national certification, work-based learning, or another measure of accountability that aligns with Perkins V as a quality indicator, this material could very well be assessed on that quality indicator. It is the responsibility of the teacher to ensure all competencies for the selected quality indicator are covered throughout the year.

Unit 1: Course Orientation and Safety Review

Competencies and Suggested Objectives

1. Describe the purpose of the course. [DOK1]
   a. Identify student and course expectations.
   b. Review the health science student organization (HOSA).
      • Deadlines
      • Nominate officers
      • Fundraising
      • National service project
      • Competitive events
   c. Discuss leadership and personal development in accordance with HOSA guidelines.

2. Review and complete proper procedures for clinical site visits as needed. [DOK1]
   a. Research and identify local facility requirements and complete various tasks.
      • Proper Occupational Safety and Health Administration (OSHA) and Health Insurance and Portability and Accountability Act (HIPAA) training standards
      • Student/volunteer health requirements (immunizations, tuberculosis (tb) test, etc.)
      • Proper worksite behavior (e.g., cell phone use)
      • Proper identification and documentation
      • Safety standards
   b. Apply employability/career-readiness skills in healthcare.
      • Chain of command
      • Communication skills
      • Customer service
      • Decision making
      • Emotional intelligence
      • Flexibility
      • Organization
      • Problem-solving
      • Scope of practice
      • Time management
      • Work ethic

3. Review and demonstrate the proper safety procedures in the healthcare setting. [DOK2]
   a. Describe personal and environmental safety practices.
   b. Identify common safety hazards.
   c. Utilize emergency procedures and protocols.

Unit 2: Employment Preparation and Embedded Work-Based Learning

Competencies and Suggested Objectives

1. Research current available jobs across the healthcare field to develop a chart that compares specific elements. [DOK1]
 	
   a. Compare specific employment elements.
       • Minimum education
       • Certifications
       • Minimum experience
       • Job description/responsibilities
       • Salary

2. Through a real job search, analyze differences in online application requirements of various job postings. [DOK1]

3. Research and select a real job advertisement. [DOK2]
 	
   a. Develop a cover letter to fit the job advertisement using terminology that reflects the culture and values specific to that company or clinic.
   b. Create a resumé with fabricated elements to fit the real job advertisement.
 	
Please note: This resumé is not to be used for a real job application, but for learning purposes only. Delete any fabricated elements before using for a real job application.

4. Identify the personal traits and attitudes desirable in a member of the career-ready healthcare team. [DOK2]
 	
   a. Define and demonstrate desirable traits and attitudes of team members.
 	
       • Acceptance of criticism   • Integrity
       • Accuracy   • Patience
       • Compassion   • Positive attitude
       • Competence   • Responsibility
       • Dependability   • Self-motivation
       • Discretion   • Social and cultural competence
       • Empathy   • Tact
       • Enthusiasm   • Team player
       • Honesty   • Willingness to learn
       • Initiative
 	
   b. Summarize professional standards for hygiene, dress, language, confidentiality, verbal communication, and behavior.

5. Demonstrate real-world interview skills led by the instructor and/or external supervisors. [DOK3]
 	
   a. Include certain skills in the real-world demonstration.
       • Aligned to a specific industry/job advertisement
       • Professional attire

• Cover letter
• Application and/or resumé
6. Write customized thank-you letters to each member of the interview committee and send them using available methods of delivery. [DOK3]

7. Develop components of a work-based learning personal portfolio. [DOK3]
 	
   a. Create a student personal profile on the state-approved digital platform.
       • Accomplishments/certifications
       • Career objectives
       • References
   b. Develop and track the student project learning experiences.
       • Plan
       • Journal
       • Picture
       • Reflect
       • Externally evaluate
*Refer to the updated and approved work-based learning requirements.

Enrichment
1. Conduct virtual interviews in addition to real-world interviews (e.g., via Virtual platform and video chat, Flipgrid, etc.).
2. Evaluate various career ladders for advancement in the healthcare field.

Unit 3: Human Growth and Development

Competencies and Suggested Objectives

1. Discuss the stages of growth and development across the lifespan. [DOK1]
 	
    a. Describe the four main types of growth and development (physical, mental, emotional, and social) that occur within the stages of life.
        • Infancy (birth–1 year)
        • Early childhood (1–6 years)
        • Late childhood (6–12 years)
        • Adolescence (12–18 years)
        • Early adulthood (19–40 years)
        • Middle adulthood (40–65 years)
        • Late adulthood (65 years and older)

2. Describe Maslow's hierarchy of human needs. [DOK1]
 	
    a. Identify and define the levels of need in the proper order.
        • Physiological
        • Safety and security
        • Love and affection
        • Self-esteem
        • Self-actualization
    b. Discuss the importance of each level.

3. Explain the concepts related to death and dying. [DOK1]
 	
    a. Describe Dr. Kubler Ross's five stages of grief.
        • Denial
        • Anger
        • Bargaining
        • Depression
        • Acceptance

4. Present on a topic related to the concepts of human growth and development. [DOK2]   a. Research, develop, and deliver a presentation related to at least one of the topics in Competencies 1–3.

5. Discuss methods of satisfying human needs. [DOK1]
 	
    a. Differentiate between direct and indirect needs.
        • Direct: hard work, realistic goals, cooperation with others, situation evaluation
        • Indirect: rationalization, projection, displacement, compensation, daydreaming, repression, suppression, regression, denial, and withdrawal

Enrichment
1. Apply proper procedure for postmortem care.
2. Utilize guidelines for HOSA Knowledge Test on Human Growth and Development.

Unit 4: Nutrition and Dietetics

Competencies and Suggested Objectives
1. Explore the field of nutrition and dietetic services. [DOK1]

a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information for various careers.
       • Registered dietician
       • Nutritionist

2. Describe the basic concepts and demonstrate skills related to the field of nutrition and dietetic services. [DOK 2]
    a. Differentiate between the six essential nutrient groups:
       • Carbohydrates
       • Lipids
       • Proteins
       • Vitamins
       • Minerals
       • Water
    b. Define the following therapeutic diets and associated medical conditions.
       • Low sodium diet (hypertension, congestive heart failure)
       • Low cholesterol diet (atherosclerosis)
       • Diabetic diet (diabetes)

3. Design a personal health meal plan utilizing online resources or applications. [DOK3]   *Refer to the Dietary Guidelines for Americans at usda.gov.

Enrichment
1. Utilize guidelines for HOSA Knowledge Test on Nutrition.
2. Properly determine body mass index (BMI) and interpret nutrition labels.
3. Calculate daily caloric intake.

Unit 5: Emergency Services and Basic Life Support

Competencies and Suggested Objectives

1. Explore careers in the field of emergency services. [DOK1]
   a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information for various careers.
      • Emergency/Trauma Physician
      • Paramedic
      • Emergency Medical Technician (EMT)
      • Flight Nurse
      • Emergency Response Team Specialist

2. Perform skills obtained in training or certification for basic life support according to the latest information from the American Heart Association or American Red Cross. [DOK3]
   a. Demonstrate the procedure for administering cardiopulmonary resuscitation (CPR) to infants, children, and adults.
   b. Demonstrate the procedure for administering CPR using an automated external defibrillator (AED) for infants, children, and adults.
   c. Demonstrate the procedure for removal of foreign-body airway obstruction for infants, children, and adults.

Enrichment
1. Contact and become involved in a local community emergency response team (CERT) by undergoing the proper training, specifically the Mississippi Youth Preparedness Initiative (MyPI). 2. Differentiate between common and emergency procedures, including patient assessment, airway management, oxygen therapy, immobilization skills, and patient transfers. 3. Utilize HOSA competitive events guidelines on emergency personnel.

Unit 6: First Aid

Competencies and Suggested Objectives

1. Discuss and demonstrate the necessary skills to provide first aid treatment. [DOK1]
    a. Describe the basic principles of first aid.
         • Recognize emergency exists
         • Scene safety
         • Patient assessment (responsiveness, injuries present, etc.)
         • Activate EMS
         • Triage (if multiple victims are present)

2. Describe and demonstrate the concepts for treatment of bleeding wounds and the application of dressing and bandages. [DOK2]
    a. Differentiate between arterial bleeding and venous bleeding.
    b. Identify types of wounds.
         • Abrasions
         • Lacerations
         • Puncture
         • Amputation
    c. Identify signs and symptoms of internal bleeding.
         • Tenderness
         • Swelling
         • Deformity
         • Cold and clammy skin
         • Rapid and weak pulse
         • Drop in blood pressure
         • Restlessness
         • Excessive thirst
         • Vomiting blood
         • Blood in urine and feces
    d. Apply the proper procedure for treating a major and minor wound.

3. Describe the concepts for treating shock. [DOK2]
    a. Differentiate between the types of shock.
         • Anaphylactic
         • Hemorrhagic
         • Septic
    b. Identify the general signs and symptoms of shock.
         • Cyanosis
         • Disphoresis
         • Rapid pulse and respiration
         • Low blood pressure
    c. Apply the proper procedure for treating shock in various situations.

4. Describe the concepts for treating skeletal injuries. [DOK2]

a. Identify and describe fractures and dislocations.

b. Describe the following types of immobilization devices and their proper use:
- Anatomical splint
- Soft splint
- Rigid splint
- Sling (cravat)

c. Apply the proper procedure for treating a skeletal injury.

5. Describe the concepts for treating injuries that result from exposure to extreme heat and cold. DOK2

a. Differentiate between the types of heat/cold-related injuries/illnesses
- Heat stroke
- Heat exhaustion
- Heat cramps
- Hypothermia
- Frostbite

b. Apply the proper procedure for treating a heat/cold-related illness.

6. Describe the concepts for treating burns. DOK2

a. Differentiate between the types of burns.
- Superficial (1st degree)
- Partial thickness (2nd degree)
- Full thickness (3rd degree)

b. Apply the proper procedure for treating a burn.

7. Describe the concepts for treating sudden illnesses. DOK2

a. Differentiate between emergency conditions.
- Stroke
- Seizure
- Diabetic reaction (hyperglycemia, hypoglycemia)

b. Apply the proper procedure treating the above sudden illnesses.

8. Describe the concepts for treating specific injuries. DOK2

a. Identify the common injuries to specific body parts.
- Eyes
- Ears
- Nose
- Head/skull
- Chest
- Abdomen
- Genital organs

b. Apply proper treatment for specific injuries of the above body parts.

9. Describe the concepts for treatment of poisoning. DOK2

a. Identify the types of poisoning and their respective treatment.

• Ingestion
• Inhalation
• Injection
• Contact
b. Apply proper treatment for one of the poisonings in Objective A.
10. In student groups, create scenarios and simulate any of the above first aid skills. [DOK3]

Enrichment
1. Complete the certification process for Heart Saver First Aid.
2. Utilize HOSA competitive events guidelines for triage and first aid.
3. Use proper medical terminology for the above signs and symptoms.

Unit 7: Vital Signs

Competencies and Suggested Objectives

1. Research key terms and concepts for recording vital signs. [DOK1]
   a. Define the key terms and concepts for recording vital signs.
      • Sphygmomanometer
      • Stethoscope
      • Temporal thermometer
      • Tympanic/aural thermometer
      • Electronic thermometer
      • Axillary thermometer
      • Rectal thermometer
      • Pulse sites (radial, apical, brachial)
      • Dyspnea
      • Hypertension
      • Orthostatic hypotension
      • Pyrexia
      • Afebrile
      • Tachycardia
      • Bradycardia
      • Tachypnea
      • Bradypnea
      • Apnea
      • Systolic
      • Pulse Oximeter

2. Identify expected normal ranges and the implications of each. [DOK2]
   a. Research and define the current normal range for adult blood pressure according to the American Heart Association.
   b. Identify the expected normal ranges for adult pulse rate, oxygenation percentage, respiration rate, and temperatures.
   c. Discuss the factors that cause variations in adult pulse rate, oxygenation percentage, respiratory rate, temperatures, and blood pressure.

3. Demonstrate proper procedures for measuring and recording vital signs according to HOSA standards. [DOK2]
   a. Measure and record oral, rectal, axillary, and tympanic temperatures accurately.
   b. Measure and record apical and radial pulse to an accuracy of ± 2 beats per minute.
   c. Measure and record respirations to an accuracy of ± 2 of instructor's count.

d. Measure and record blood pressure to an accuracy of ± 2 millimeters of actual reading.

Enrichment
1. Utilize HOSA competitive guidelines in the Nursing Assistant event.

Unit 8: Medical Services

Competencies and Suggested Objectives

1. Explore the field of medical services. [DOK1]
 	
    a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information for various careers.
 	
      • Physicians (MD, DO)
      • Physician assistant (PA)
      • Dentist (DDS, DMD)
      • Dental hygienist
      • Surgical technologist
      • Medical assistant

2. Describe basic medical assistant concepts and procedures. [DOK2]
 	
    b. Identify the concepts related to physical exams.
 	
      • Types of physical examinations: eye, ear, nose, and throat (EENT), gynecology (GYN), and general
      • Techniques: observation, palpation, percussion, and auscultation
      • Equipment used: cervical spatula (Ayer blade), vaginal speculum, nasal speculum, ophthalmoscope, otoscope, percussion (reflex) hammer, tongue blade/depressor, and tuning fork
 	
    c. Apply proper procedure.
 	
      • Measuring height and weight for adults and infants
      • Graphing height and weight on the infant growth chart
      • Snellen vision screening
      • Positioning a patient: supine, prone, sims', fowler's (all three), lithotomy, reverse Trendelenburg

Enrichment

1. Further explore medical and nursing specialties, including the following: anesthesiology, cardiology, dermatology, endocrinology, family practice, gastroenterology, gerontology, gynecology, internal medicine, neonatology, neurology, obstetrical practice, ophthalmology, orthopedist, otolaryngology, pathology, pediatrics, plastic surgeon, proctology, radiology, surgery, and urology.
 2. Obtain head and chest circumferences for infants and graph measurements on a growth chart.
 3. Demonstrate various skills.
 	
      • Minor surgery and suture removal
      • Recording electrocardiogram
 4. Refer to HOSA guidelines for various competitive events for skills related to medical/nursing care.

Unit 9: Nursing Services

Competencies and Suggested Objectives

1. Explore the field of nursing services. [DOK1]
 	
   a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information for various careers.
 	
      • Certified Nursing Assistant (CNA)
      • Licensed Practical Nurse (LPN)
      • Registered Nurse (RN)
      • Nurse Practitioner (NP)
      • Certified Registered Nurse Anesthetist (CRNA)

2. Demonstrate basic nursing skills. [DOK2]
 	
   a. Apply the proper procedures for the following:
 	
      • Properly communicate when admitting, transferring, and discharging a patient (e.g., empathy, clear instructions, and patient and family engagement).
      • Measure a patient's intake and output.
      • Apply one knee-high, elastic stocking.
      • Assist with use of a bedpan.
      • Demonstrate proper mouth care (including cleaning upper or lower denture).
      • Dress client with affected (weak) right arm.
      • Feed client who cannot feed themselves.
      • Give a modified bed bath (face, one arm, hand, and underarm).
      • Demonstrate bed making procedures for both unoccupied and occupied beds (patient/client does not need assistance to turn).
      • Demonstrate positioning/turning methods.
      • Provide fingernail care on one hand.
      • Provide foot care on one foot.

3. Acting as a CNA in a role-play simulation, apply the proper procedure for morning care on a patient in an occupied bed, including recording vital signs and any two of the above skills. [DOK3]

Enrichment
1. Other careers to explore include nurse educator, midwife, Doctor of Nursing Practice (DNP), and clinical nurse specialist.
2. Refer to HOSA's Clinical Nursing and Home Health Aide guidelines for various competitive events.
3. Review and complete skills and other requirements necessary to become a CNA.

Unit 10: Laboratory Services

Competencies and Suggested Objectives

1. Explore the field of laboratory services. [DOK1]
 	
   a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information of various careers.
      • Pathologist
      • Medical laboratory technician
      • Phlebotomy technician

2. Describe the basic concepts and skills of laboratory services. [DOK1]
 	
   a. Define basic laboratory diagnostic tests.
      • Human chorionic gonadotropin (hCG) pregnancy test
      • Potassium
      • Hematocrit
      • Hemoglobin
      • White blood cell count
      • Sodium
      • Glucose
      • Creatinine
      • Low-density lipoprotein (LDL)
      • High-density lipoprotein (HDL)
   b. Describe methods of collecting various specimens.
      • Blood (capillary and venous)
      • Mucus (nasal swab)
      • Sputum
      • Stool
      • Urine (clean catch midstream)

Enrichment
1. Explore other fields in laboratory service, including cytotechnologists and histotechnologists.
2. Define normal values for the above laboratory services and discuss the importance of each.

Unit 11: Medical Imaging Services

Competencies and Suggested Objectives

1. Explore the field of medical imaging services. [DOK1]
   a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information of various careers.
       • Radiologist
       • Radiologic Technician

2. Describe basic concepts and perform skills related to the field of medical imaging. [DOK2]
   a. Define specific medical imaging procedures.
       • Echocardiography
       • Magnetic resonance imaging (MRI)
       • Mammography
       • Nuclear medicine
       • Sonography
       • Computerized tomography (CT) scan
       • X-ray
   b. Demonstrate basic radiological positioning, including posterior-anterior, anterior-posterior, lateral, and oblique.

Enrichment
1. Explore additional credentials in the field of medical imaging services. (e.g., sonographer, mammographer, computed tomography technologist, magnetic resonance technologist, and nuclear medicine technologist.)

Unit 12: Healthcare Administration

Competencies and Suggested Objectives

1. Explore the field of health information management. [DOK1]
   a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information of various careers.
       • Medical coder
       • Registered health information administrator
       • Medical interpreter
       • Case manager
       • Hospital admissions clerk

2. Identify factors that affect healthcare systems, the services that are performed, and the quality of care. [DOK2]
   a. Research and discuss the impact of emerging issues on healthcare delivery systems.
       • Behavior/mental health
       • Bioethics
       • Epidemiology
       • Socioeconomics
       • Technology
   b. Review common healthcare payment methods.
   c. Describe the responsibilities of consumers within the healthcare system.
       • Self-advocacy
       • Patient compliance
       • Provider and consumer obligations
       • Wellness and prevention

Enrichment
1. Describe health information management concepts and procedures, including completing insurance forms, assembling a client record, diagnostic coding, procedural coding, proper telephone techniques, and office management.
2. Differentiate between health informatics, health information management, coding, and other related fields.

Unit 13: Mental Health Services

Competencies and Suggested Objectives
1. Explore the field of mental health services. DOK1
a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information of various careers.

• Psychiatrist
        • Psychologist
        • Counselor
        • Social worker
        • Mental health technician

2. Describe the basic concepts related to the field of mental health. DOK1
a. Using resources from the National Alliance of Mental Illness (NAMI), differentiate between mental disorders.

• Psychosis (schizophrenia)
        • Psychoneurosis disorders
            o Anxiety
            o Depression
            o Panic disorder
            o Phobias
            o Obsessive-compulsive disorder
        • Manic depressive
        • Dissociative identity disorder
        • Eating disorders

b. Research and identify forms of therapy.

• Electroconvulsive therapy
        • Medication
        • Psycho/group therapy
        • Behavioral modification

3. Discuss the correlation between mental health issues and negative responses to those issues. DOK3
a. Using resources such as NAMI and the Mississippi Department of Mental Health, research and evaluate the current state and national data on various topics.

• Suicide
        • Substance abuse (opioids, alcohol, and other drugs)
        • Violence (domestic, self-harm, and group-related)
        • Criminal activity

b. In a group setting, discuss the importance of the various topics below.
• Awareness, education, and disorder recognition   • Reporting and acquiring help for oneself and others (e.g., hotlines, authorities, hospitals, and naloxone [NARCAN®])

- Suicide warning signs and prevention
- Drug-related issues (legal ramifications, proper disposal, etc.)

Enrichment
1. Perform training for mental health first aid.
2. Conduct an opioid abuse awareness campaign.
3. Research and discuss any emerging substance abuse problems (naloxone, vaping, etc.).
4. Undergo de-escalation training and discuss how this is used.

Unit 14: Sports Medicine

Competencies and Suggested Objectives
1. Explore the field of sports medicine. [DOK1]
a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information for various careers.
• Team physician
• Exercise physiologist
• Strength and conditioning coach
• Athletic trainer (certified and assistant)
• Personal trainer
2. Describe the basic concepts of assessment in sports medicine. [DOK1]
a. Identify the components of a sports physical.
• Height
• Weight
• Vital signs
• Musculoskeletal abnormalities
• Cardiovascular abnormalities
• Medical history
b. Discuss the use of SOAP notes in injury assessment.
• S—Subjective
• O—Objective
• A—Assessment
• P—Plan
c. Differentiate between the following types of body fat assessment techniques.
• Smart device scan (e.g., watch, cellphone, and smart scale)
• In-body scan
• Dual-energy X-ray absorptiometry (DEXA) scan
• Calipers
3. Analyze and apply basic injury treatment modalities in sports medicine. [DOK2]
a. Identify the following components of PRICE.
• P—Protect
• R—Rest
• I—Ice
• C—Compression
• E—Elevation
b. Define terms and discuss the importance of vasodilation and vasoconstriction, each in relation to cold/heat application.
c. Apply the proper procedure for applying heat and cold to injuries.

Enrichment
1. Incorporating HOSA sports medicine competitive event guidelines, perform the proper procedure for taping various joints and stretching.

Unit 15: Rehabilitative Services

Competencies and Suggested Objectives
1. Explore the field of rehabilitative services. [DOK1]
a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information for various careers.

• Physical therapist (PT)
         • Physical therapist assistant (PTA)
         • Occupational therapist (OT)
         • Occupational therapist assistant (OTA)
         • Speech-language pathologist (SLP)
         • Recreational therapist (RT)

2. Describe and demonstrate the basic concepts of range of motion (ROM). [DOK2]
a. Differentiate between active and passive ROM.   b. Identify basic terminology related to ROM.

• Adduction
         • Abduction
         • Flexion
         • Extension
         • Rotation
         • Circumduction

c. Demonstrate the proper procedure passive range of motion (PROM) for one knee, one ankle, and one shoulder.
3. Demonstrate the proper procedures related to ambulation and assistive devices, according to HOSA standards. [DOK2]

a. Apply the proper procedure for fitting a patient with crutches and giving instruction for a three-point gait.
     b. Apply the proper procedure for ambulating a patient with a gait belt.
     c. Apply procedure for fitting and ambulating a patient with a walker and cane.

Enrichment
1. See HOSA guidelines for physical therapy events and apply the proper procedure for fitting a patient for a walker, crutches, and a cane.

Unit 16: Respiratory Care Services

Competencies and Suggested Objectives

1. Explore the field of respiratory therapy. [DOK1]
   a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information for various careers.
       • Registered Respiratory Therapist (RRT).

2. Describe the basic concepts related to the field of respiratory therapy. [DOK1]
   a. Identify and provide the rationale for basic respiratory tests and procedures.
       • Oxygen saturation
       • Arterial blood gases
       • Oxygen therapy (e.g., nasal cannula and simple mask)
       • Incentive spirometry
       • Medicated aerosol therapy
   b. Define medical conditions related to respiratory care.
       • Atelectasis
       • Oxygen toxicity

Unit 17: Pharmacology

Competencies and Suggested Objectives
1. Explore the field of pharmacological services. [DOK1]
a. Research and describe the respective educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary information.
• Pharmacist (hospital versus retail)
• Pharmacy technician
2. Describe concepts and perform skills related to the field of pharmacology. [DOK2]
a. Identify the proper components of a prescription.
• Patient identification
• Frequency
• Drug name
• Quantity
• Dosage
• Administration/route
• Physician signature
b. Differentiate between administration methods.
• Oral
• Rectal
• Inhalation
• Topical
• Sublingual
• Injections (intramuscular [IM], intravenous [IV], and subcutaneous [subQ])
c. Perform mathematical computations related to pharmacology.
• Convert metric units to household units and vice versa utilizing the HOSA Medical Math formula sheet.
• Record dosage time using a 24-hour clock.
d. Given a teacher-created scenario, administer medication utilizing the Six Rights of Medication Administration.
• Right medication
• Right dose
• Right patient
• Right time
• Right method
• Right documentation

Enrichment
1. Perform various oral drug dosage calculations.
2. Research any given drug using a drug reference guide to identify various topics.
• Generic name

- Drug classification
- Dosage and route
- Mechanism of action
- Adverse reactions
- Patient education

Unit 18: Clinical Capstone Project

Competencies and Suggested Objectives
The goal of this unit is to develop the knowledge, skills, and attitudes necessary to provide patient-centered care to individuals with common diseases and disorders. Students will learn the five steps of the patient care process and apply them in a clinical capstone project involving a fictional patient. This project could contribute to the state-approved work-based learning requirements if the skills performed by the students are recorded and evaluated in the digital platform properly.

1. Students will research and learn about common diseases and disorders that affect human beings, including symptoms, causes, and treatments. [DOK3]
    a. Develop a fictional patient for the duration of the clinical capstone project, incorporating specific details and factors to characterize this individual.
        • Name
        • Stage of life
        • Demographics
    b. Select a disease or disorder that will be tracked in the fictional patient. See the table below for common disease and disorder ideas.
    c. Explore the five patient-centered steps in the patient care process and apply the process to the fictional patient by providing patient-centered care.
        • Assessment
        • Diagnosis
            o Maslow's hierarchy of needs
        • Planning SMART goals
            o S—Specific
            o M—Measurable or meaningful
            o A—Attainable or action-oriented
            o R—Realistic or results-oriented
            o T—Timely or time-oriented
        • Implementation
        • Evaluation
    d. Apply the patient care process to the fictional patient by providing patient-centered care as applicable.
    e. Report the outcome of the patient's problem in a mock scenario, illustrating the steps taken by the medical caretaker within a teacher-approved method.
    f. Record the patient care process as needed in the state-approved digital portfolio.

Common Diseases and Disorders
Cardiovascular diseases
Cancer
Respiratory diseases
Diabetes
Alzheimer's disease and other dementias
Arthritis

Osteoporosis

Depression

Anxiety disorders

Autoimmune disorders (e.g., rheumatoid arthritis, lupus, and multiple sclerosis)

Infectious diseases (e.g., influenza, pneumonia, tuberculosis, and HIV/AIDS)

Gastrointestinal disorders (e.g., irritable bowel syndrome [IBS], Crohn's disease, and ulcerative colitis)

Skin disorders (e.g., eczema, psoriasis, and acne)

Neurological disorders (e.g., Parkinson's disease, epilepsy, and migraine)

Vision and hearing disorders (e.g., cataracts, glaucoma, and age-related hearing loss)

Please note: This list is not exhaustive, and there are many more diseases and disorders that affect human beings. Specific diseases and disorders may be approved by the teacher.

Student Competency Profile

Student's Name: _____

This record is intended to serve as a method of noting student achievement of the competencies in each unit. It can be duplicated for each student, and it can serve as a cumulative record of competencies achieved in the course.

In the blank before each competency, place the date on which the student mastered the competency.

		Unit 1: Course Orientation and Safety Review
	1.	Describe the purpose of the course.
	2.	Review and complete proper procedures for clinical site visits as needed.
	3	Review and demonstrate the proper safety procedures in the healthcare setting.
		Unit 2: Employment Preparation and Embedded Work-Based Learning
	1.	Research current available jobs across the healthcare field to develop a chart that compares specific elements.
	2.	Through a real job search, analyze differences in online application requirements of various job postings.
	3.	Research and select a real job advertisement.
	4.	Identify the personal traits and attitudes desirable in a member of the career-ready healthcare team.
	5.	Demonstrate real world interview skills led by the instructor and/or external supervisors.
	6.	Write customized thank you letters to each member of the interview committee and send using available methods of delivery.
	7.	Develop components of a work-based learning personal portfolio.
		Unit 3: Human Growth and Development
	1.	Discuss the stages of growth and development across the lifespan.
	2.	Describe Maslow's hierarchy of human needs.
	3.	Explain the concepts related to death and dying.
	4.	Present on a topic related to the concepts of human growth and development.
	5.	Discuss methods of satisfying human needs.
		Unit 4: Nutrition and Dietetics
	1.	Explore the field of nutrition and dietetic services.
	2.	Describe the basic concepts and demonstrate skills related to the field of nutrition and dietetic services.
	3.	Design a personal health meal plan utilizing online resources or applications.

Unit 5: Emergency Services and Basic Life Support		
	1.	Explore careers in the field of emergency services.
	2.	Perform skills obtained in training or certification for basic life support according to the latest information from the American Heart Association or American Red Cross.
Unit 6: First Aid		
	1.	Discuss and demonstrate the necessary skills to provide first aid treatment.
	2.	Describe and demonstrate the concepts for treatment of bleeding wounds and the application of dressing and bandages.
	3.	Describe the concepts for treating shock.
	4.	Describe the concepts for treating skeletal injuries.
	5.	Describe the concepts for treating injuries that result from exposure to extreme heat and cold.
	6.	Describe the concepts for treating burns.
	7.	Describe the concepts for treating sudden illnesses.
	8.	Describe the concepts for treating specific injuries.
	9.	Describe the concepts for treatment of poisoning.
	10.	In student groups, create scenarios and simulate any of the above first aid skills.
Unit 7: Vital Signs		
	1.	Research key terms and concepts for recording vital signs.
	2.	Identify expected normal ranges and the implications of each.
	3.	Demonstrate proper procedures for measuring and recording vital signs according to HOSA standards.
Unit 8: Medical Services		
	1.	Explore the field of medical services.
	2.	Describe basic medical assistant concepts and procedures.
Unit 9: Nursing Services		
	1.	Explore the field of nursing services.
	2.	Demonstrate basic nursing skills.
	3.	Acting as a CNA in a role-play simulation, apply the proper procedure for morning care on a patient in an occupied bed, including recording vital signs and any two of the above skills.
Unit 10: Laboratory Services		
	1.	Explore the field of laboratory services.
	2.	Describe the basic concepts and skills of laboratory services.
Unit 11: Medical Imaging Services		
	1.	Explore the field of medical imaging services.

	2.	Describe basic concepts and perform skills related to the field of medical imaging.
Unit 12: Healthcare Administration		
	1.	Explore the field of health information management.
	2.	Identify factors that affect healthcare systems, the services that are performed, and the quality of care.
Unit 13: Mental Health Services		
	1.	Explore the field of mental health services.
	2.	Describe the basic concepts related to the field of mental health.
	3.	Discuss the correlation between mental health issues and negative responses to those issues.
Unit 14: Sports Medicine		
	1.	Explore the field of sports medicine.
	2.	Describe the basic concepts of assessment in sports medicine.
	3.	Analyze and apply basic injury treatment modalities in sports medicine.
Unit 15: Rehabilitative Services		
	1.	Explore the field of rehabilitative services.
	2.	Describe and demonstrate the basic concepts of range of motion (ROM).
	3.	Demonstrate the proper procedures related to ambulation and assistive devices according to HOSA standards.
Unit 16: Respiratory Care Services		
	1.	Explore the field of respiratory therapy.
	2.	Describe the basic concepts related to the field of respiratory therapy.
Unit 17: Pharmacology		
	1.	Explore the field of pharmacological services.
	2.	Describe concepts and perform skills related to the field of pharmacology.
Unit 18: Clinical Capstone Project		
	1.	Students will research and learn about common diseases and disorders that affect human beings, including symptoms, causes, and treatments.

Appendix A: National Health Science Standards

Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Standard																		
NCHSE-1.1			X	X	X	X	X		X	X	X		X	X	X	X		X
NCHSE-1.2					X	X	X	X	X	X			X	X	X	X	X	X
NCHSE-1.3				X	X		X	X	X		X	X	X	X			X	X
NCHSE-2.1	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
NCHSE-2.2		X			X	X	X	X	X	X	X	X	X	X		X	X	X
NCHSE-2.3		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NCHSE-3.1	X	X			X	X		X	X					X	X	X	X	X
NCHSE-4.1	X	X	X		X	X		X	X	X	X	X	X	X	X	X	X	X
NCHSE-4.2	X	X	X				X		X		X	X	X	X	X	X	X	X
NCHSE-4.3	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NCHSE-4.4.		X			X	X		X	X	X	X	X	X	X	X	X	X	X
NCHSE-5.1	X		X				X		X	X	X	X	X	X	X	X	X	X
NCHSE-5.2	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X
NCHSE-6.1		X		X				X		X	X		X	X	X		X	X
NCHSE-6.2		X	X	X		X	X	X	X		X	X	X		X	X	X	X
NCHSE-7.1	X				X	X	X	X	X	X			X	X	X			X
NCHSE-7.2	X		X	X	X	X		X	X		X			X	X	X	X	X
NCHSE-7.3	X			X	X		X	X	X	X	X		X	X	X	X	X	X
NCHSE-7.4	X			X	X	X	X	X	X	X	X		X	X	X	X	X	X
NCHSE-7.5	X		X		X	X	X	X	X	X	X		X	X	X			X
NCHSE-8.1		X	X	X		X		X	X	X	X	X	X	X	X	X	X	X
NCHSE-8.2		X				X		X	X	X	X	X		X	X	X	X	X
NCHSE-9.1	X		X	X	X		X		X				X	X	X	X	X	X
NCHSE-9.2	X		X	X	X	X		X	X				X	X	X			X
NCHSE-10.1		X	X	X	X	X	X	X	X		X	X	X	X		X		X
NCHSE-11.1	X	X	X	X		X	X	X	X		X				X	X	X	X

National Consortium for Health Science Education
National Health Science Standards—August 2022

The National Health Science Standards provide a clear and consistent understanding of industry and postsecondary expectations for health science teachers and students. These content standards are broad and frame the essential knowledge common across all health professions. Utilizing input from business and industry experts, these standards are designed to prepare students to be college- and career-ready.

These standards provide the foundation for health science curriculum design, instruction, and assessment, but they are not limited to the content listed in each of the 11 National Health Science Standards.

Foundation Standard 1: Academic Foundation

Understand human anatomy, physiology, common diseases and disorders, and medical math principles.

1.1 Human Anatomy and Physiology

1.1.1 Describe the organization of the human body and directional terms.

1.2 Diseases and Disorders

1.2.1 Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders, including, but not limited to the following: anxiety, arthritis, asthma, bipolar disorder, cancer, cataracts, concussion/traumatic brain injury (TBI), cystic fibrosis, dementia, depression, diabetes, gastric ulcer, hepatitis, hypertension, melanoma, muscular dystrophy (MD), myocardial infarction, sexually transmitted infection (STI), stroke/cerebrovascular accident (CVA), tuberculosis, and urinary tract infection (UTI).

1.2.2 Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.

1.3 Medical Mathematics

1.3.1 Demonstrate competency using basic math skills and mathematical conversions as they relate to healthcare.

1.3.2 Demonstrate the ability to analyze diagrams, charts, graphs, and tables to interpret healthcare results.

1.3.3 Demonstrate use of the 24-hour clock/military time.

Foundation Standard 2: Communications

Demonstrate methods of delivering and obtaining information, while communicating effectively.

2.1 Concepts of Effective Communication

2.1.1 Model verbal and nonverbal therapeutic communication.

2.1.2 Identify common barriers to communication.

2.1.3 Distinguish between subjective and objective information.

2.1.4 Interpret elements of the communication process using sender-message-receiver feedback model.

2.1.5 Modify communication to meet the needs of the patient/client and to be appropriate to the situation.

2.1.6 Describe appropriate interactions with patients throughout various stages of psychosocial development.

2.2 Medical Terminology

2.2.1 Use common roots, prefixes, and suffixes to communicate information.

2.2.2 Interpret common medical abbreviations to communicate information.

2.3 Written Communication Skills

2.3.1 Use proper elements of written and electronic communication (spelling, grammar, and formatting).

2.3.2 Prepare examples of technical and informative writing.

2.3.3 Demonstrate appropriate use of digital communication in a work environment, such as email, text, and social media.

Foundation Standard 3: Systems

Identify how key systems affect services performed and quality of care.

3.1 Healthcare Delivery Systems

3.1.1 Differentiate healthcare delivery systems and healthcare related agencies.

3.1.2 Examine the healthcare consumer's rights and responsibilities within the healthcare system.

3.1.3 Analyze the impact of emerging issues on healthcare delivery systems.

3.1.4 Analyze healthcare economics and related terms.

Foundation Standard 4: Employability Skills

Use employability skills to enhance employment opportunities and job satisfaction.

4.1 Personal Traits of the Health Professional

4.1.1 Identify personal traits and attitudes desirable in a career-ready member of a health team.

4.1.2 Summarize professional standards as they apply to hygiene, dress, language, confidentiality, and behavior.

4.2 Employability Skills

4.2.1 Apply employability/soft skills in healthcare.

4.3 Career Decision-Making

4.3.1 Research levels of education, credentialing requirements, and employment trends in health professions.

4.3.2 Distinguish differences among careers within a Health Science pathway.

4.4 Employability Preparation

4.4.1 Develop components of a personal portfolio.

4.4.2 Identify strategies for pursuing employment.

Foundation Standard 5: Legal Responsibilities

Describe legal responsibilities, limitations, and implications on healthcare worker actions.

5.1 Legal Responsibilities and Implications

5.1.1 Analyze legal responsibilities and implications of criminal and civil law.

5.2 Legal Practices

5.2.1 Apply standards for the safety, privacy, and confidentiality of health information.

5.2.2 Describe advance directives.

5.2.3 Summarize the essential characteristics of a patient's basic rights within a healthcare setting.

5.2.4 Differentiate informed and implied consent.

5.2.5 Describe the concept of scope of practice.

5.2.6 Interpret procedures for reporting activities and behaviors that affect the health, safety, and welfare of others (e.g., incident report).

Foundation Standard 6: Ethics

Understand accepted ethical practices with respect to cultural, social, and ethnic differences within the healthcare environment.

6.1 Ethical Practice

6.1.1 Differentiate between ethical and legal issues impacting healthcare.

6.1.2 Identify ethical issues and their implications related to healthcare.

6.2 Cultural, Social, and Ethnic Diversity

6.2.1 Discuss religious, social, and cultural values as they impact healthcare.

6.2.2 Demonstrate respectful and empathetic treatment of all patients/clients/families.

Foundation Standard 7: Safety Practices

Identify existing and potential hazards to clients, co-workers, and oneself. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.

7.1 Infection Control

7.1.1 Explain principles of infection transmission.

7.1.2 Differentiate methods of controlling the spread and growth of pathogens.

7.2 Personal Safety

7.2.1 Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.

7.2.2 Demonstrate principles of body mechanics during patient care.

7.3 Environmental Safety

7.3.1 Apply safety techniques in the work environment.

7.4 Common Safety Hazards

7.4.1 Observe all safety standards related to the occupational exposure to hazardous chemicals standard (Safety Data Sheets [SDS]).

7.4.2 Comply with safety signs, symbols, and labels.

7.5 Emergency Procedures and Protocols

7.5.1 Practice fire safety in a healthcare setting.

7.5.2 Apply principles of basic emergency response in natural disasters and other emergencies (i.e., safe location, contact emergency personnel, and follow facility protocols).

Foundation Standard 8: Teamwork

Identify roles and responsibilities of individual members as part of the healthcare team.

8.1 Healthcare Teams

8.1.1 Evaluate roles and responsibilities of healthcare team members.

8.1.2 Identify characteristics of effective teams.

8.2 Team Member Participation

8.2.1 Recognize methods for building positive team relationships.

8.2.2 Analyze attributes and attitudes of an effective leader.

8.2.3 Apply effective techniques for managing team conflict.

8.2.4 Evaluate why teamwork is an important part of healthcare and how it improves patient care.

Foundation Standard 9: Health Maintenance Practices

Differentiate between wellness and disease. Promote disease prevention and model healthy behaviors.

9.1 Healthy Behaviors

9.1.1 Promote self-care behaviors of health and wellness.

9.1.2 Examine various aspects of behavioral health.

9.1.3 Describe public health strategies for prevention of disease.

9.1.4 Investigate complementary and alternative health practices as they relate to wellness and disease prevention.

9.2 Healthcare Across the Lifespan

9.2.1 Discuss physical, mental, social, and behavioral development and its impact on healthcare.

9.2.2 Identify socioeconomic determinants of health and wellness.

Foundation Standard 10: Technical Skills

Apply and demonstrate technical skills and knowledge common to healthcareer specialties.

10.1 Technical Skills

10.1.1 Demonstrate procedures for measuring and recording vital signs in both normal and abnormal ranges, including but not limited to blood pressure, height and weight, oxygen saturation, pain, pulse, respirations, and temperature.

10.1.2 Obtain training or certification in automated external defibrillator (AED), cardiopulmonary resuscitation (CPR), first aid, and/or foreign body airway obstruction (FBAO).

Foundation Standard 11: Information Technology in Healthcare

Apply information technology practices common across health professions.

11.1 Key principles, components, and practices of health information systems (HIS)

11.1.1 Identify components of an electronic health record (EHR) and/or electronic medical record (EMR).

11.1.2 Explore different types of health data collection tools.

11.1.3 Create electronic documentation that reflects timeliness, completeness, and accuracy.

11.1.4 Examine information systems policies, procedures, and regulations as required by national, state, and local entities.

Appendix B: 21st–Century Skills

	Units	1	2	3	4	5	6	7	8	9	10	11	12	13		14	15	16	17	18
Standards																				
CS1		X		X	X						X			X			X		X	X
CS2		X	X								X			X			X			X

CS3		X	X	X																X
CS4		X		X																X
CS5																				X
CS6		X	X		X	X	X	X	X	X	X	X	X				X	X	X	X
CS7		X			X	X	X	X	X	X	X	X	X	X		X	X		X	X
CS8		X			X					X	X					X	X	X	X	X
CS9		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X		X
CS10			X		X	X	X	X	X	X	X	X	X			X	X	X	X	X
CS11					X	X	X	X	X	X	X	X	X			X	X	X	X	X
CS12		X		X																X
CS13		X			X	X	X	X	X	X	X	X	X	X		X	X	X	X	X
CS14		X		X						X						X	X		X	X
CS15			X		X		X	X	X	X	X	X	X				X	X		X
CS16		X	X	X						X			X			X		X	X

CSS1—21st–Century Themes

CS1 Global Awareness
1. Using 21st–century skills to understand and address global issues
2. Learning from and working collaboratively with individuals representing diverse cultures, religions, and lifestyles in a spirit of mutual respect and open dialogue in personal, work, and community contexts
3. Understanding other nations and cultures, including the use of non-English languages

CS2 Financial, Economic, Business, and Entrepreneurial Literacy
1. Knowing how to make appropriate personal economic choices
2. Understanding the role of the economy in society
3. Using entrepreneurial skills to enhance workplace productivity and career options

CS3 Civic Literacy
1. Participating effectively in civic life through knowing how to stay informed and understanding governmental processes
2. Exercising the rights and obligations of citizenship at local, state, national, and global levels
3. Understanding the local and global implications of civic decisions

CS4 Health Literacy
1. Obtaining, interpreting, and understanding basic health information and services and using such information and services in ways that enhance health
2. Understanding preventive physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance, and stress reduction
3. Using available information to make appropriate health-related decisions
4. Establishing and monitoring personal and family health goals
5. Understanding national and international public health and safety issues

CS5 Environmental Literacy
1. Demonstrating knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as it relates to air, climate, land, food, energy, water, and ecosystems
2. Demonstrating knowledge and understanding of society's impact on the natural world (e.g., population growth, population development, resource consumption rate, etc.)

3. Investigating and analyzing environmental issues and make accurate conclusions about effective solutions
4. Taking individual and collective action toward addressing environmental challenges (e.g., participating in global actions, designing solutions that inspire action on environmental issues)

CSS2—Learning and Innovation Skills
　CS6　Creativity and Innovation
　　1. Think creatively
　　2. Work creatively with others
　　3. Implement innovations
　CS7　Critical Thinking and Problem Solving
　　1. Reason effectively
　　2. Use systems thinking
　　3. Make judgments and decisions
　　4. Solve problems
　CS8　Communication and Collaboration
　　1. Communicate clearly
　　2. Collaborate with others

CSS3—Information, Media, and Technology Skills
　CS9　Information Literacy
　　1. Access and evaluate information
　　2. Use and manage information
　CS10　Media Literacy
　　1. Analyze media
　　2. Create media products
　CS11　ICT Literacy
　　1. Apply technology effectively

CSS4—Life and Career Skills
　CS12　Flexibility and Adaptability
　　1. Adapt to change
　　2. Be flexible
　CS13　Initiative and Self-Direction
　　1. Manage goals and time
　　2. Work independently
　　3. Be self-directed learners
　CS14　Social and Cross-Cultural Skills
　　1. Interact effectively with others
　　2. Work effectively in diverse teams
　CS15　Productivity and Accountability
　　1. Manage projects
　　2. Produce results
　CS16　Leadership and Responsibility
　　1. Guide and lead others

2. Be responsible to others