



MISSISSIPPI
DEPARTMENT OF
EDUCATION

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~~2020 Sports Medicine~~

~~Program CIP: 51.0913—Athletic Training/Trainer~~

~~Direct inquiries to~~

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~~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 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.~~

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Acknowledgments

The sports medicine curriculum was presented to the Mississippi Board of Education on January 16, 2020. The following persons were serving on the state board at the time:

~~Dr. Carey M. Wright, state superintendent of education
Dr. Jason S. Dean, chair
Mr. Buddy Bailey, vice chair
Ms. Rosemary G. Aultman
Dr. Karen Elam
Mr. Johnny Franklin
Dr. John R. Kelly
Mr. Charles McClelland
Ms. Brittany Rye
Mr. Sean Suggs~~

The following MDE and RCU managers and specialists assisted in the development of sports medicine curriculum:

~~Wendy Clemons, associate superintendent of education for the Office of Career and Technical Education at the Mississippi Department of Education (MDE), supported the RCU and the teachers throughout the development of the sports medicine curriculum framework and supporting materials.
Dr. Aimee Brown, bureau director for the Office of Career and Technical Education, supported the developmental and implementation process of the curriculum framework and supporting materials.
Sam Watts, instructional design specialist for the RCU at MSU researched and authored this framework. sam.watts@reu.msstate.edu~~

Also, special thanks are extended to the teachers who contributed teaching and assessment materials that are included in the framework and supporting materials:

~~Kira Berch, Florence High School, Florence
Kalilah Kemp, Carl Keen Career and Technical Center, Clarksdale
Corey Lock, Choctaw County Career and Technical Center, Aekerman
Brian Maskew, Hattiesburg High School, Hattiesburg~~

Also, special thanks are given to the industry and institution of higher learning members who contributed their time, insight, and expertise to the development of this curriculum:

———Peyton Fandel, DPT, Columbus Orthopedic, Starkville

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

~~Dr. Estelle Watts, program coordinator—health science specialist for the MDE Office of Career and Technical Education~~

~~Betsey Smith, director for the RCU at MSU~~

~~Brad Skelton, curriculum manager for the RCU at MSU~~

~~Melissa Luekett, instructional design specialist, RCU at MSU~~

Standards

Standards and alignment crosswalks are referenced in the appendices. Mississippi's CTE sports medicine curriculum is aligned to the following standards:

Board of Certification for the Athletic Trainer

The Board of Certification, Inc. (BOC) provides exceptional credentialing programs for health care professions and is responsible for the certification of athletic trainers. The BOC program confers an entry level athletic trainer certification and establishes the requirements for maintaining athletic trainer status. The BOC is the only accredited certification program for athletic trainers in the United States. For more information, please see bocate.org/athletic-trainers.

National Athletic Trainers Association

The National Athletic Trainers Association (NATA) is the professional membership organization for athletic trainers and others professionals who support the athletic training profession. NATA formed the Secondary School Athletic Trainer's committee and subcommittee, consisting of 19 medical and educational professionals. These individuals constructed a secondary sports medicine course outline that was used as a reference in the making of this document. For more information, visit nata.org/.

College and Career-Ready Standards

College and career ready 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-Ready Standards (MS CCRS)* 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

International Society for Technology in Education (ISTE) Standards

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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. *21 Framework Definitions*. Published 2015.

p21.org/storage/documents/docs/P21_Framework_Definitions_New_Logo_2015.pdf

Preface

Secondary career and technical education (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; Carl D. Perkins Vocational Education Act IV, 2007; 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, reu.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, call 662.325.2510.~~

Executive Summary

Pathway Description

Sports medicine is one of the second course options for students in the health sciences career cluster who have successfully completed the health science core class. The sports medicine career pathway focuses on the aspects of the prevention and care of sports injuries. Students will learn the importance of prevention, evaluation, acute treatment, and therapeutic care related to injuries in sports. Students will also learn about the types of injuries that can occur and be introduced to the emergency services associated with athletics. Additionally, students will focus on rehabilitation techniques used to help patients recover from sports injuries. The program offers students the opportunity to examine the different careers associated with sports medicine and develop the workplace and employability skills associated with sports medicine professions.

The sports medicine pathway requires a minimum of 100 hours of clinical-type experience to be obtained by the program's completion. It is recommended to spread these hours out among the length of the program by beginning to give students multiple opportunities to complete some hours in the health science core class. The remaining number of hours not obtained by students in the health science core class should be obtained by the completion of the sports medicine class. This clinical-type experience can include tours of health care facilities, guest speakers, participation in health fairs or health-related community service, laboratory/skills practice, demonstration in the classroom, and observation or job shadowing experiences in various health care settings. Videos do not count toward this 100-hour requirement unless they are used in conjunction with a hands-on training or class (i.e., CPR).

College, Career, and Certifications

Upon completion of the sports medicine program, students who successfully master the curriculum should have the necessary skills to enter the workforce or postsecondary education to further their careers in sports medicine. Depending on the opportunities available in the area and the students' goals, they could work as an athletic trainer student aide at a community college or university, or as a physical therapy aide at a local clinic. Related postsecondary fields of study include anything from physical or occupational therapy assistant school at a community college, a bachelor's degree in athletic training to become a certified athletic trainer, or even a postgraduate degree in physical therapy, occupational therapy, or any other related field.

Grade Level and Class Size Recommendations

It is recommended that students enter this program as a 10th grader. Exceptions to this are a district level decision based on class size, enrollment numbers, and the maturity of the student. Scheduling and/or operating more than one course in the same classroom/laboratory with the same teacher is not recommended. The recommended class size is 12-15 students to enable the teacher to provide skills instruction on a one-on-one basis. Please be aware that no more than a 10 to 1 student/teacher ratio is often required by healthcare facilities in order to participate in job shadowing. Having too large of a class decreases the quality experience that the sports medicine class is meant to provide for students.

Student Prerequisites

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

1. ~~C or higher in the health science core~~
2. ~~C or higher in biology~~
3. ~~C or higher in English (the previous year)~~
4. ~~C or higher in high school-level math (last course taken or the instructor can specify the level of math instruction needed)~~
5. ~~Instructor approval and TABE reading score (eighth grade or higher)~~

OR

1. ~~C or higher in the health science core~~
2. ~~TABE reading and math score (eighth grade or higher)~~
3. ~~Instructor approval~~

OR

1. ~~Instructor approval~~

Assessment

The latest assessment blueprint for the curriculum can be found at reu.msstate.edu/Curriculum/CurriculumDownload.

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 CTE teacher licensure information can be found at mdek12.org/OTL/OEL/career&technical

Professional Learning

If you have specific questions about the content of any of the training sessions provided, please contact the RCU at 662.325.2510.

Course Outlines

Option 1—Two 1-Carnegie Unit Courses

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

- ~~1. Sports Medicine: Theory and Application I—Course Code: 995202~~
- ~~2. Sports Medicine: Theory and Application II—Course Code: 995203~~

~~Course Description: Sports Medicine: Theory and Application I~~

~~Sports Medicine: Theory and Application I provides a solid foundation for careers in the sports medicine field. After a brief review of safety and communication, this course breaks down the various members of the sports medicine team and their respective roles. This is followed by a unit on health care administration, which covers how medical care is administered, recorded, processed, and stored; and how to perform mass athletic physical examinations. Students will then learn about taping and bracing in sports, followed by a significant amount of time on first aid, CPR, and other emergency care services in sports. This course ends with the fundamental concepts of evaluation and therapeutic rehabilitation and modalities.~~

~~Sports Medicine: Theory and Application I—Course Code: 995202~~

Unit	Unit Name	Hours
1	Orientation, Safety, and Communication	10.5
2	The Sports Medicine Team	10.5
3	Health Care Administration	15
4	Protective Equipment and Techniques	12
5	First Aid in Sports	15
6	Emergency Care in Sports	22.5
7	Fundamental Concepts of Evaluation	7.5
8	Therapeutic Rehabilitation and Modalities	22.5
Total		115.5

~~Course Description: Sports Medicine: Theory and Application II~~

~~Sports Medicine: Theory and Application II introduces students to the various injuries to the head, spine, chest, abdomen, and upper and lower extremities that commonly occur in sports. In each injury unit, the students will cover all basic anatomy for that particular region of the body, common injuries to that area and mechanisms of each, and common medical field tests for those injuries. Then, students will conduct an evaluation and develop a treatment plan for a particular injury. After spending a significant amount of time on this, the course concludes with introductory lessons on training and conditioning techniques, nutrition in sports, and pharmacology, followed by the final unit on employment opportunities in health care. In this last~~

unit, students will conduct interviews, and research and prepare applications, resumés, and cover letters for actual jobs to prepare themselves for employment in any health care field.

Sports Medicine: Theory and Application II— Course Code: 995203

Unit	Unit Name	Hours
9	Injuries to the Head and Spine	12
10	Injuries to the Chest and Abdomen	12
11	Injuries to the Upper Extremities	22.5
12	Injuries to the Lower Extremities	22.5
13	Basics of Training and Conditioning Techniques	10.5
14	Nutrition in Sports	10.5
15	Pharmacology and Drugs in Sports	7.5
16	Employment Opportunities in Health Care	7.5
Total		105

Option 2—One 2-Carnegie Unit Course

This curriculum consists of one 2-credit course:

1. Sports Medicine—Course Code: 995200

Course Description: Sports Medicine

The Sports Medicine course provides a solid foundation for careers in the sports medicine field. After a brief review of safety and communication, this course breaks down the various members of the sports medicine team and their respective roles. This is followed by a unit on health care administration, which covers how medical care is administered, recorded, processed, and stored; and how to perform mass athletic physical examinations. Students will then learn about taping and bracing in sports followed by a significant amount of time on first aid, CPR, and other emergency care services in sports. This course continues with the fundamental concepts of evaluation and therapeutic rehabilitation and modalities before introducing students to various injuries to the head, spine, chest, abdomen, and upper and lower extremities that commonly occur in sports. In each injury unit, the students will cover all basic anatomy for that particular region of the body, common injuries to that area and mechanisms of each, and common medical field tests for those injuries. Students will then conduct an evaluation and develop a treatment plan for a particular injury. After spending a significant amount of time on this, the course concludes with introductory lessons on training and conditioning techniques, nutrition in sports, and pharmacology, and a final unit on employment opportunities in health care. In this last unit, students will conduct interviews and research and prepare applications, resumés, and cover letters for actual jobs to prepare themselves for employment in any health care field.

Sports medicine—Course Code: 995200

Unit	Unit Name	Hours
1	Orientation, Safety, and Communication	10.5
2	The Sports Medicine Team	10.5
3	Health Care Administration	15
4	Protective Equipment and Techniques	12
5	First Aid in Sports	15
6	Emergency Care in Sports	22.5
7	Fundamental Concepts of Evaluation	7.5
8	Therapeutic Rehabilitation and Modalities	22.5
9	Injuries to the Head and Spine	12
10	Injuries to the Chest and Abdomen	12
11	Injuries to the Upper Extremities	22.5
12	Injuries to the Lower Extremities	22.5
13	Basics of Training and Conditioning Techniques	10.5
14	Nutrition in Sports	10.5
15	Pharmacology and Drugs in Sports	7.5
16	Employment Opportunities in Health Care	7.5
Total		220.5

Research Synopsis

Introduction

The sports medicine pathway introduces students to basic medical concepts in the exciting area of athletics and fitness. Although this curriculum is written from the perspective of an athletic trainer, it will prepare students for any career in the field of sports medicine. The sports medicine program will target careers at both the professional and technical levels in health care. Students enrolled in these courses should be well prepared to pursue degrees at the community college and 4-year college level.

Needs of the Future Workforce

The following table contains information that is specific to the state of Mississippi. On average, national growth and earnings are higher for most jobs. For comparison, the average projected employment growth for all occupations together in Mississippi is 5.2%. These projections are from 2016 to 2026. The average earnings are for the year 2018.

Description	Current Jobs (2016)	Projected Jobs (2026)	Change (#)	Change (%)	Median Annual Earnings
Athletic Trainers	220	250	30	13.6	\$46,900
Coaches and Scouts	1,320	1,500	180	13.6	\$54,660
Dieticians/Nutritionists	520	560	40	7.7	\$49,110
Dietetic Technicians	200	220	20	10.0	\$24,570
Diagnosing Medical Sonographers	730	830	100	13.7	\$64,770
Emergency Medical Technicians and Paramedics	2,150	2,230	80	3.7	\$37,070
Exercise Physiologists	40	50	10	25.0	\$44,840
Fitness Trainers and Aerobics Instructors	1,130	1,210	80	7.1	\$31,410
Occupational Therapists	960	1,100	140	14.6	\$81,400
Occupational Therapy Assistants	340	400	60	17.7	\$57,440
Pharmacists	2,540	2,620	80	3.2	\$122,080
Pharmacy Technicians	3,630	3,960	330	9.1	\$30,480
Physical Therapists	1,710	1,960	250	14.6	\$88,270
Physical Therapy Assistant	930	1,090	160	17.2	\$48,400
Radiologic Technicians and Technologists	2,180	2,290	110	5.1	\$47,930
Recreational Therapists	200	210	10	5.0	\$37,760
Surgeon	370	380	10	2.7	\$268,670
Veterinarian	490	540	50	10.2	\$76,100
Veterinarian Technologists and Technicians	570	630	60	10.5	\$34,580
Veterinarian Assistants	970	1,090	120	12.4	\$23,820

Source: Mississippi Department of Employment Security, mdes.ms.gov (2019).

Perkins IV Requirements

The sports medicine curriculum meets Perkins IV requirements of high-skill, high-wage, and/or high-demand occupations by introducing students to and preparing students for occupations. It also offers students a program of study including secondary, postsecondary, and IHL courses that prepare them for occupations in these fields. Additionally, the sports medicine curriculum is integrated with academic Mississippi's College and Career Ready Standards. Lastly, the sports medicine curriculum focuses on ongoing and meaningful professional development for teachers as well as relationships with industry.

Curriculum Content: Summary of Standards

The standards to be included in the sports medicine curriculum are the BOC standards, the NATA secondary sports medicine curriculum standards, the Mississippi College and Career Readiness standards for English language arts and human anatomy and physiology, the Framework for 21st Century Skills, and the International Society for Technology in Education (ISTE) standards. Combining these standards to create this document will result in highly skilled, well-rounded students who are prepared to enter a postsecondary academic or career and technical program. They will also be prepared to compete academically at a national level, as these standards are designed to prepare students for success in community colleges, institutes of higher learning, and the workforce.

Academic Infusion

The sports medicine curriculum is aligned to the Mississippi College and Career Readiness Standards for Human Anatomy and Physiology. Alignment crosswalks can be found in the appendices.

Transition to Postsecondary Education

The latest articulation information for secondary to postsecondary can be found at the Mississippi Community College Board (MCCB) website, mccb.edu/.

Best Practices

Innovative Instructional Technologies

Recognizing that today's students are digital learners, the classroom should be equipped with tools that will teach them with applicable and modern practices. The sports medicine educator's goal should be to include teaching strategies that incorporate current technology. To make use of the latest online communication tools such as blogs, podcasts, and various social media platforms, the classroom teacher is encouraged to use a learning management system that introduces students to education in an online environment and places more responsibility of learning on the student.

Differentiated Instruction

Students learn in a variety of ways. Add the student's background, emotional health, and circumstances, and a very unique learner emerges. By providing various teaching and assessment strategies, students with various learning preferences can have more opportunities to succeed.

Career and Technical Education Student Organizations

Teachers should investigate opportunities to sponsor a student organization. The Health Occupations Students of America (HOSA) is the main health science student organization in Mississippi. These organizations foster the types of learning expected from the sports medicine curriculum. Student organizations provide participants/members with growth opportunities and competitive events, and also open the doors to the world of health science 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 sports medicine curriculum for group work. To function in today's workforce, students need to be able to collaborate with others and solve problems without excessive conflict, therefore, the sports medicine curriculum provides opportunities for students to work together and help each other complete complex tasks. Many field experiences exist within the sports medicine program that allow and encourage collaboration with professionals currently in the health care field.

Field Experience

Field experience is an extension of understanding the competencies taught in the sports medicine classroom. The two-year health science program requires students to obtain a minimum of 100 clinical-type hours, which should include, but is not limited to, field trips, observations, job shadowing, and preferably some sort of volunteer, internship, or apprenticeship experience (see "Pathway Description" for more details). These real-world connections and applications provide a link to all types of students in regards to knowledge, skills, and professional dispositions. Thus, supervised collaboration and immersion into the health care world around the students are key to their success, knowledge, and skills development.

Conclusions

The sports medicine curriculum will prepare students with the necessary skills and knowledge to advance into a large health care field for further education and training. The foundational terminology, concepts, and medical skills practice provided for students in this curriculum will enable them to confidently move forward to the workforce, postsecondary education/training, or to an institution of higher learning (IHL) upon graduation.

Professional Organizations

Association of Career and Technical Education

aeteonline.org

International Society for Technology in Education

iste.org

National Organizations

American Association for Respiratory Care

aarc.org

American Board of Sport Psychology

americanboardofsportpsychology.org

American College of Sports Medicine

acsm.org

American Health Care Association

ahca.org

American Health Information Management Association

ahima.org

American Hospital Association

aha.org

American Medical Association

ama-assn.org

American Occupational Therapy Association

aota.org

Association of Allied Health Programs

www.asahp.org

American Physical Therapy Association

apta.org

American Red Cross National Headquarters

redcross.org

American School Health Association

ashaweb.org

American Society of Radiologic Technologists

asrt.org

Arthroscopy Association of North America

aana.org

Association for Applied Sport Psychology

appliedsportpsych.org

Association for Healthcare Documentation Integrity

ahdionline.org

Association for Professionals in Infection Control and Epidemiology

apie.org

Center for Health and Health Care in Schools

healthinschools.org

Collegiate and Professional Sports Dieticians Association

sportsrd.org

College Athletic Trainers' Society

collegeathletictrainer.org

Health Professions Network

healthpronet.org

Hospital Corporation of America

hcahealthcare.com

~~**National Association of Emergency
Medical Technicians**
naemt.org~~

~~**National Association of Interscholastic
Athletics**
naia.org~~

~~**National Athletic Trainer's Association**
nata.org~~

~~**National Collegiate Athletic Association**
ncaa.org~~

~~**National Health Council**
nationalhealthcouncil.org~~

~~**National Operating Committee on
Standards for Athletic Equipment**
noesae.org~~

~~**North American Society for Pediatric
Exercise Medicine**
www.naspem.org~~

~~**Society of Nuclear Medicine and
Molecular Imaging**
snmmi.org~~

State Organizations

~~**American Heart Association (MS Offices)**
heart.org~~

~~**American Lung Association**
lung.org~~

~~**The Diabetes Foundation of Mississippi**
msdiabetes.org~~

~~**Mississippi Office of Healthy Schools—
A Division of the Mississippi Department
of Education**
healthisacademic.org~~

Using This Document

Suggested Time on Task

This section indicates an estimated number of clock hours of instruction that should be required to teach the competencies and objectives of the unit. A minimum of 140 hours of instruction is required for each Carnegie unit credit. The curriculum framework should account for approximately 75–80% of the time in the course. The remaining percentage of class time will include instruction in non-tested material, hours of clinical-type experience, review for end-of-course testing, and special projects.

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.

Integrated Academic Topics, 21st Century Skills and Information and Communication Technology Literacy Standards, ACT College Readiness Standards, and Technology Standards for Students

This section identifies related academic topics as required in the Subject Area Testing Program (SATP) in Algebra I, Biology I, English II, and U.S. History from 1877, which are integrated into the content of the unit. Research-based teaching strategies also incorporate ACT College Readiness standards. This section also identifies the 21st Century Skills and Information and Communication Technology Literacy skills. In addition, national technology standards for students associated with the competencies and suggested objectives for the unit are also identified.

Teacher Resource Document

The accompanying teacher resource document contains references, lesson ideas, websites, teaching and assessment strategies, scenarios, skills to master, and other resources divided up by unit. This document will be updated periodically by the RCU staff. Please check regularly for new information in each unit. If you have something you would like added, or a question about something in the document, contact the RCU and ask for the instructional design specialist (IDS) for your program or email the IDS directly. The teacher resource document can be downloaded at reu.msstate.edu/Curriculum/CurriculumDownload.aspx.

Enrichment Material

Many of the units include an enrichment section at the end. This section of material will not be tested on the Mississippi Career Planning and Assessment System (MS-CPAS), however it will greatly enhance the learning experiences for the students. It is suggested to use the enrichment material when needed or desired by the teacher, and if time allows in the class.

Unit 1: Orientation, Safety, and Communication

Competencies and Suggested Objectives
<p>1. Establish the expectations, policies, and procedures of the sports medicine program. ^{DOK-1}</p> <ul style="list-style-type: none">a. Describe the program's policies and procedures.<ul style="list-style-type: none">• Dress code• Attendance• Academic requirements• Discipline• Rules and regulations of the various sports medicine environments• Transportation regulationsb. Give a brief overview of the course.<ul style="list-style-type: none">• Course objectives• Delivery methods (e.g., teaching style, materials, field experiences, etc.)c. Compare and contrast the policies of the local program/school to expectations of employers in the sports medicine industry.
<p>2. Review and implement the proper safety procedures and protocols in the various sports medicine environments. ^{DOK-2}</p> <ul style="list-style-type: none">a. Principles of body mechanics and ergonomicsb. Techniques to prevent accidents and injuriesc. Fire safety protocolsd. Emergency response protocols for natural disasterse. Precautions needed to prevent the spread of communicable diseasesf. Personal protective equipment (PPE)g. Standard precautions based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.h. OSHA's blood-borne pathogen standards
<p>3. Review and implement proper communication and etiquette in the various sports medicine environments. ^{DOK-2}</p> <ul style="list-style-type: none">a. Chain of commandb. Characteristics of professionalismc. Situational awarenessd. Confidentiality (HIPAA and FERPA)

4. Utilize career resources to develop a comprehensive class/career portfolio. ^{DOK-2}
- a. Identify and demonstrate proper file storage, sharing, and maintenance techniques (e.g., various cloud storage options, email, online collaborative platforms).
 - b. Research and initiate a student career information portfolio with the below information using ePortfolios (use paper documentation if ePortfolio is unavailable).
 - Title page
 - Table of contents (pages numbered or hyperlinked to contents)
 - Introduction/purpose of each course project
 - Valid professional email address
 - Résumé and cover letter
 - Awards/certifications
 - c. Review and update regularly throughout the year with assignments, experiences, etc.
 - d. Discuss and develop strategies to utilize this portfolio for college and career opportunities.

Enrichment

Research, identify, and complete local facility requirements.

- a. Proper OSHA and HIPAA training standards
- b. Student/volunteer health requirements (e.g., immunizations, tuberculosis test, etc.)
- c. Proper worksite behavior
- d. Proper identification and documentation
- e. Safety standards

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 2: The Sports Medicine Team

Competencies and Suggested Objectives

1. Differentiate between the various organizations contributing to sports medicine. ^{DOK-1}

a. Compare and contrast at least four professional organizations in regard to the following:

- continuing education opportunities
- professional advocacy
- publications
- practicing regulations
- general organizational structure (i.e., regional, state, national, and international).

**Note: see the "Professional Organizations" section for a brief list of possible organizations to research*

b. Research and discuss the purpose of the local and national governing bodies that establish and regulate safety standards in sports:

- Development of rules and regulations
- Physical protection and care of the athlete
- Legal protection of coaches and health care providers

2. Differentiate the roles of the sports medicine team. ^{DOK-1}

a. Identify the members of the sports medicine team and their respective roles:

- Team physician
- Nutritionist/dietician
- Specialty physicians
- Physical and occupational therapist
- Athletic trainer
- Sport psychologist
- Pharmacist
- Sport coach
- EMT and paramedic
- Strength and conditioning coach

b. Discuss how the members of the sports medicine team fall under the categories of injury/illness care and/or sports performance.

c. Identify the five performance domains and tasks of the sports medicine team:

- Prevention of athletic injuries
- Recognition, evaluation, and immediate care of injuries
- Rehabilitation and reconditioning of athletic injuries
- Health care administration
- Professional development and responsibility

d. Explain the preferred characteristics of a sports medicine professional.

- Stamina
- Sense of humor
- Adaptability
- Intellectual curiosity
- Empathy
- Ethics

~~3. Identify various employment settings for sports medicine personnel. ^{DOK+1}~~

- ~~a. Secondary schools~~
- ~~b. Colleges and universities~~
- ~~c. Professional sports~~
- ~~d. Recreational sports~~
- ~~e. Industrial setting~~
- ~~f. Clinics~~
- ~~g. Hospitals~~

Enrichment:

- ~~● Research and discuss the origination of sport (e.g., Greek and Roman civilizations, the Olympics) and the evolution of the sports medicine field.~~
- ~~● Compare HOSA to the professional organizations analyzed in competency 1.~~
- ~~● Develop a career exploration project on one or many of the members of the sports medicine team to use in HOSA competition.~~

~~*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.~~

Unit 3: Health Care Administration

Competencies and Suggested Objectives
<p>1. Identify the administrative responsibilities of a health care professional.^{DOK-3}</p> <ul style="list-style-type: none">• Design an administrative plan that includes facility design for multi-services provided, budget maintenance, supply and equipment inventory (including basic first-aid supplies), and file storage and protection.• Complete a new patient medical profile that includes, but is not limited to, demographics, medical history (i.e., personal and family), HIPAA forms, and current medical condition (e.g., medications, pain, symptoms, etc.):<ol style="list-style-type: none">a. Collect, manage, and file insurance information:<ul style="list-style-type: none">• Differentiate between the various insurance claims in regard to accidental, sports related, and catastrophic injuries.
<p>2. Plan and conduct a pre-participation physical examination to include:^{DOK-2}</p> <ol style="list-style-type: none">a. Obtaining a medical historyb. Giving a primary physical examination (height, weight, vital signs, vision screening using a Snellen eye chart, hearing screening, ROM and strength screening)
<p>3. Analyze unique legal and ethical issues in sports medicine.^{DOK-3}</p> <ol style="list-style-type: none">a. Research and discuss current legal and ethical issues related to Sports medicine.b. Based on research, facilitate a debate regarding the issues discussed in 3.a.
<p>Enrichment:</p> <ul style="list-style-type: none">• Discuss disqualifications from sports due to physical issues found in the pre-participation physical exam.

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 4: Protective Equipment and Techniques

Competencies and Suggested Objectives
<p>1. Identify, research, and discuss the governing bodies that set standards for safety and for protective equipment in sports. ^{DOK-1}</p> <ul style="list-style-type: none">a. National Operating Committee on Standards for Athletic Equipment (NOCSAE)b. National Federation of State High School Associations (NFHS)c. National Collegiate Athletic Association (NCAA)
<p>2. Identify the types of protective equipment mandated in sports for the head, chest, and lower extremity, and discuss the importance of proper application. ^{DOK-1}</p>
<p>3. Discuss the importance of quality protective equipment for joints in sports. ^{DOK-3}</p> <ul style="list-style-type: none">a. Identify the various types of protective equipment (e.g., compression sleeves, hinge braces, etc.) for both upper and lower extremities.b. Compare and contrast the advantages and disadvantages of customized versus off-the-shelf devices.c. Debate the advantages and disadvantages of taping versus bracing.
<p>4. Demonstrate the basic skills needed for taping in sports. ^{DOK-2}</p> <ul style="list-style-type: none">a. Identify the indications and contraindications of taping in sports.b. Differentiate between different types of adhesive and cohesive tape, and determine which application is best for a specific scenario.c. Identify and demonstrate the basic tape applications for upper extremities.<ul style="list-style-type: none">● Wrist● Thumb Spica● Hyperextension restriction (elbow, wrist)● Buddy tapingd. Identify and demonstrate the basic tape applications for lower extremities.<ul style="list-style-type: none">● Ankle● Arch● Achilles● Turf Toe
<p>5. Describe the steps and techniques for casting. ^{DOK-1}</p> <ul style="list-style-type: none">a. Identify and describe casting materials.b. Research and discuss the indications and contraindications for immobilization.c. Research and discuss the advantages and disadvantages of casting.
<p>Enrichment:</p> <ul style="list-style-type: none">● Make a customized foam with a thermo-moldable shell.● Identify the reasons for wrapping with elastic bandages in sports.● Apply the proper procedure for casting an upper and lower extremity.● Demonstrate the proper technique for fitting a helmet.

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 5: First Aid in Sports

Competencies and Suggested Objectives
<p>1. Discuss the necessary skills to provide first aid treatment. ^{DOK-1}</p> <p>a. Describe the basic principles of first aid.</p> <ul style="list-style-type: none">• Recognize an emergency exists• Scene safety• Patient assessment (responsiveness, injuries present)• Activate EMS• Triage (if multiple victims are present)
<p>2. Describe the concepts for treating bleeding and the application of dressings and bandages. ^{DOK-2}</p> <p>a. Identify the types of wounds.</p> <ul style="list-style-type: none">• Abrasions• Lacerations• Punctures <p>b. Apply the proper procedure for treating a major and minor wound.</p>
<p>3. Describe the concepts for treating shock. ^{DOK-2}</p> <p>a. Differentiate between types of shock.</p> <ul style="list-style-type: none">• Anaphylactic• Hemorrhagic <p>b. Identify the general signs and symptoms of shock.</p> <ul style="list-style-type: none">• Cyanosis• Diaphoresis• Rapid pulse and respiration• Low blood pressure <p>c. Apply the proper procedure for treating shock in various situations.</p>
<p>4. Describe the concepts for treating musculoskeletal injuries. ^{DOK-2}</p> <p>a. Identify types of basic musculoskeletal injuries.</p> <ul style="list-style-type: none">• Fracture• Dislocations• Subluxation• Sprains• Strains <p>b. Describe types of immobilization devices and their proper use.</p> <ul style="list-style-type: none">• Anatomical splint• Soft splint• Rigid splint• Sling (cravat) <p>c. Properly treat a musculoskeletal injury utilizing the PRICE protocol (protection, rest, ice, compression, elevation).</p>

~~5. Describe the concepts for treating sudden illnesses.^{DOK-2}~~
~~a. Differentiate between the following emergency conditions: stroke, seizure, fainting, and diabetic reaction (hyperglycemia, hypoglycemia).~~
~~b. Apply the proper procedures to treat the above sudden illnesses.~~

~~6. Describe the concepts for treating specific injuries.^{DOK-2}~~
~~a. Identify the common injuries to body parts:~~
~~• Eyes ————— • Chest~~
~~• Ears ————— • Abdomen~~
~~• Head/skull ————— • Genital organs~~
~~• Nose~~
~~b. Apply the proper treatment for specific injuries to the above body parts.~~

Enrichment:

- ~~• Complete the certification process for Heartsaver First Aid.~~
- ~~• Utilize HOSA competitive event guidelines for CERT, first aid, and EMT.~~
- ~~• Complete the MyPI training (used with multiple units).~~
- ~~• Use proper medical terminology throughout this unit.~~

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 6: Emergency Care in Sports

Competencies and Suggested Objectives
<p>1. Describe the components of an emergency action plan (EAP).^{DOK-2}</p> <p>a. Develop an EAP for a specific sports medicine setting.</p> <ul style="list-style-type: none">• Personnel responsibilities (chain of command)• Emergency communication methods• Emergency equipment (e.g., AED, spinal board, splints, trauma kit, etc.)• Venue mapping (entrance/exit protocols)• Extreme weather policies (see Mississippi High School Activity Association policies)
<p>2. Perform skills obtained in training or certification for Basic Life Support for Health Care Providers.^{DOK-2}</p> <p>a. Demonstrate the procedure for administering cardiopulmonary resuscitation (CPR) to infants, children, and adults.</p> <p>b. Demonstrate the procedure for administering CPR using an automated external defibrillator (AED) for infants, children, and adults.</p> <p>c. Demonstrate the procedure for removing a foreign body airway obstruction in infants, children, and adults.</p>
<p>3. Describe the prevention, recognition, and treatment of various heat illnesses.^{DOK-2}</p> <p>—a. Construct a prevention plan for heat illness.</p> <ul style="list-style-type: none">• Hydration• Analyze and monitor urine color• Wet bulb globe temperature monitoring• Pre-/post-exercise body weight tracking• Acclimatization procedures <p>—b. Differentiate between heat cramps, heat exhaustion, and heat stroke.</p> <p>—c. Research and discuss the proper treatment methods for heat exhaustion and heat stroke, including, but not limited to, actions determined by core temperature reading, cold water immersion, and fluid replacement (oral, intravenous).</p>

4. Transport an injured victim safely and efficiently. ^{DOK-2}

a. Demonstrate proper transportation techniques.

- Two-person crutch
- Two-handed seat
- Four-handed seat
- Fireman's carry

b. Demonstrate the proper spine boarding techniques as a team.

- Stabilize the head, neck, and spine in the discovered position
- Acquire proper spine boarding equipment
- Log-roll technique onto the spine board
- Stabilize the victim on the board
- Lift the victim

5. In a role play situation, demonstrate the steps involved in an on-the-field injury assessment according to the AHA. ^{DOK-3}

a. Perform a primary survey, including the elements below.

- Responsiveness
- Circulation
- Airway
- Breathing
- Defibrillation
- Environment/exposure

b. Apply the proper first aid procedure for the given scenario.

Enrichment:

- Debate if pads/equipment should be removed in a spinal injury case.
- Discuss the effects of altitude on the human body during physical activity.
- Complete the MyPI training (used with multiple units).

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 7: Fundamental Concepts of Evaluation

Competencies and Suggested Objectives	
1.	<p>Apply the basic anatomical concepts to sports-related injuries. ^{DOK-1}</p> <p>a. Recognize and describe the anatomical position, directions, and planes.</p> <p>b. Differentiate between, and provide examples of, the types of joints.</p> <ul style="list-style-type: none"> • Ball and socket • Saddle • Hinge • Condylloid • Pivot • Gliding <p>c. Differentiate between, and provide examples of, the types of bones.</p> <ul style="list-style-type: none"> • Flat • Irregular • Long • Sesamoid • Short
2.	<p>Differentiate between HOPS (history, observation, palpitation, special test) and SOAP (subjective, objective, assessment, plan). ^{DOK-2}</p> <p>a. Define and perform the proper steps for a HOPS evaluation.</p> <p>b. Define each component of a SOAP note and demonstrate using this method.</p>
3.	<p>Explain the characteristics of sports trauma. ^{DOK-1}</p> <p>a. Differentiate between and provide athletic and non-athletic examples of the major biomechanical forces affecting connective tissue.</p> <ul style="list-style-type: none"> • Compression • Bending • Shear • Tension • Torsion <p>b. Differentiate between the various acute injuries that can occur in sports and their causes (biomechanical forces above).</p> <ul style="list-style-type: none"> • Sprains • Dislocation • Abrasions • Strains • Subluxation • Lacerations • Contusions • Fractures • Blisters • Nerve damage <p>a. Describe the various chronic injuries that can occur.</p> <ul style="list-style-type: none"> • Tendonitis • Osteoarthritis • Bursitis
4.	<p>Explain the evaluation of injuries by diagnostic testing. ^{DOK-1}</p> <p>a. Identify and describe the following clinical assessments: joint stress test; manual muscle test; bone percussion, and compression tests; and girth measurement (for swelling).</p> <p>b. Differentiate diagnostic imaging procedures.</p> <ul style="list-style-type: none"> • X-ray • Ultra-sound • MRI • CT scan
Enrichment:	
<ul style="list-style-type: none"> • Complete a medical profile throughout the course. 	

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 8: Therapeutic Rehabilitation and Modalities

Competencies and Suggested Objectives
<p>1. Identify and discuss the presentation and duration of the three phases of musculoskeletal healing in acute and chronic injuries. ^{DOK-1}</p> <ul style="list-style-type: none">• Inflammatory phase• Repair phase• Remodeling phase
<p>2. Investigate the various types of therapeutic modalities. ^{DOK-2}</p> <p>a. Research and discuss the safety concerns, equipment types/sources, physical principals, indications, and contraindications of types of therapies.</p> <ul style="list-style-type: none">• Thermal/Cryo• Ultrasound• Electrotherapy (quad polar, bipolar, Russian stim)• Massage <p>b. Given a scenario of a specific injury, identify which modality to use and explain why.</p>
<p>3. Demonstrate the proper procedures related to ambulation and assistive devices according to HOSA standards. ^{DOK-2}</p> <p>a. Apply the proper procedure for fitting a patient with crutches and giving instruction for a three-point gait.</p> <p>b. Apply the proper procedure for ambulating a patient with a gait belt.</p>
<p>4. Identify and discuss the primary components of a rehabilitation program. ^{DOK-1}</p> <ul style="list-style-type: none">a. Range of motion (ROM)b. Neuromuscular re-education (core stabilization)c. Muscular strength, endurance, and powerd. Restoring sport-specific function (or activities of daily living [ADL])
<p>5. Research and discuss the various components of ROM. ^{DOK-2}</p> <p>a. Differentiate between the types of ROM.</p> <ul style="list-style-type: none">• Passive (PROM)• Active Assistive (AAROM)• Active (AROM)• Resistive (RROM) <p>b. Demonstrate the proper procedure for using a goniometer to measure movements within each anatomical plane (flexion, extension, abduction, adduction, rotation, circumduction).</p>

6. Research and discuss the various components of neuromuscular re-education and restoring muscular strength, endurance, and power. ^{DOK-2}
- a. Differentiate between the types of muscle contraction.
 - Isometric
 - Isotonic
 - Isokinetic
 - Eccentric
 - Concentric
 - b. Differentiate between open and closed chain exercises and demonstrate examples of each.
 - Demonstrate various techniques to develop proprioception and spatial awareness (e.g., balance progressions [stable and unstable surfaces], gait training, rhythmic stabilization, proprioceptive neuromuscular facilitation [PNF], etc.).
 - c. Discuss possible ways to assess a patient's progression to return to play (or ADL).

** Note: see the Basics of Training and Conditioning unit for more specific training and conditioning techniques.*

Enrichment:

- Explore the use of aquatic training.
- Utilize HOSA physical therapy skills competition guidelines.
- Research and explore newly developed therapeutic and rehabilitative techniques.

**Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.*

Unit 9: Injuries to the Head and Spine

Competencies and Suggested Objectives

1. Review and recognize the specific anatomy of the head and spine related to sports injuries. ^{DOK 1}

- a. Identify bones and bony landmarks related to head and spine injuries.
 - Temporal bone
 - Orbit (orbital socket)
 - Mastoid process
 - Nasal bones (generic)
 - Occipital bone
 - Vertebral spinous processes
- b. Identify the soft and connective tissues related to head and spine injuries and their respective functions.
 - Intervertebral discs
 - Sternocleidomastoid
 - Trapezius
 - Latissimus dorsi
- c. Identify the nerve tissues related to head and spine injuries.
 - Spinal cord
 - Brain
 - Cranial nerve
 - Brachial plexus
 - Central nervous system
 - Peripheral nervous system

2. Discuss the common injuries of the head and spine. ^{DOK 3}

- a. Identify the common injuries and a given mechanism of each.
 - Skull fractures
 - Concussions
 - Epidural and subdural hematoma
 - Vertebral fractures
 - Spinal sprains and strains
 - Vertebral disc dysfunction
 - Spinal cord injuries
- b. Identify and discuss special tests used to assess injuries to the head and spine.
 - Pen light assessment
 - Balance error scoring system (BESS) testing
 - Bilateral sensation and motor function
- c. In student groups, complete the tasks below for at least one of the injuries in 2.a.
 - Demonstrate proper procedure for evaluation utilizing HOPS and SOAP notes.
 - Research and develop a treatment plan.
 - Develop a written, oral, or digital case study presentation discussing the injury, evaluation, and treatment plan chosen.

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 10: Injuries to the Chest and Abdomen

Competencies and Suggested Objectives

1. Review and recognize the specific anatomy of the chest and abdomen as related to sports injuries. ^{DOK 1}
 - a. Identify the bones and bony landmarks related to injuries of the chest and abdomen.
 - Xiphoid process
 - Sternoclavicular joint (SC joint)
 - Ribs
 - b. Identify soft and connective tissues related to injuries of the chest and abdomen and their respective functions.
 - Intercostals
 - Obliques
 - Abdominals
 - Pectorals
 - c. Identify the organs related to injuries of the chest and abdomen.
 - Spleen
 - Heart
 - Appendix
 - Diaphragm
 - Lungs
 - Kidneys
2. Discuss common injuries of the chest and abdomen. ^{DOK 3}
 - a. Identify common injuries and a given mechanism of each.
 - Abdominal strains
 - Rib fractures
 - Pectoralis strains
 - Sternoclavicular (SC) joint sprain
 - Solar plexus
 - Hypertrophic cardiomyopathy
 - Sports hernias
 - Sudden death syndrome in athletes
 - Pneumothorax
 - Internal organ contusions
 - b. Identify the signs and symptoms of internal bleeding.
 - Tenderness
 - Drop in blood pressure
 - Swelling
 - Restlessness
 - Deformity
 - Excessive thirst
 - Cold and clammy skin
 - Vomiting blood
 - Rapid and weak pulse
 - Blood in urine and feces
 - c. Identify and discuss special tests used to assess injuries of the chest and abdomen.
 - Quadrant assessment
 - McBurney's point
 - Rib compression
 - Kehr's sign
 - d. In student groups, complete the tasks below for at least one of the injuries in 2.a.
 - Demonstrate proper procedure for evaluation utilizing HOPS and SOAP notes.
 - Research and develop a treatment plan.
 - Develop a written, oral, or digital case study presentation discussing the injury, evaluation, and treatment plan chosen.

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 11: Injuries to the Upper Extremities

Competencies and Suggested Objectives

1. Review and recognize the specific anatomy of the upper extremities related to sports injuries. ^{DOK+1}
 - a. Identify the bones and bony landmarks related to injuries of the upper extremities.
 - Shoulder
 - Acromioclavicular (AC) joint
 - Spine of scapula
 - Coracoid process
 - Glenohumeral joint
 - Distal head of the humerus
 - Elbow
 - Olecranon process
 - Medial and lateral epicondyles
 - Proximal heads of radius and ulna
 - Wrist/Hand
 - Scaphoid
 - Lunate
 - Hamate
 - Distal heads of radius and ulna
 - Distal and proximal heads of phalanges and metacarpals
 - b. Identify soft and connective tissues related to injuries of the upper extremities and their respective functions.
 - Shoulder
 - Rotator cuff muscles (SITS)
 - Supraspinatus
 - Infraspinatus
 - Teres minor
 - Subscapularis
 - Deltoid
 - Proximal head of the bicep
 - Distal head of the pectoralis
 - Labrum
 - Rhomboids
 - Elbow
 - Olecranon bursae
 - Ulnar collateral ligament
 - Radial collateral ligament
 - Distal heads of triceps and biceps
 - Brachioradialis
 - Wrist/Hand
 - Flexor muscle group
 - Extensor muscle group
 - Pronator muscle group

- ~~Supinator muscle group~~
- ~~Ulnar collateral ligament (UCL) of the thumb~~
- e. ~~Identify nerve tissues related to injuries of the upper extremities.~~
 - ~~Ulnar nerve~~
 - ~~Radial nerve~~
 - ~~Median nerve~~

2. ~~Discuss common injuries of the upper extremities.~~^{DOK-3}

- a. ~~Identify common injuries and a given mechanism of each.~~
 - ~~Shoulder~~
 - ~~AC sprain~~
 - ~~Labrum tear~~
 - ~~Rotator cuff strain~~
 - ~~Dislocation/subluxation~~
 - ~~Impingement~~
 - ~~Elbow~~
 - ~~UCL sprain~~
 - ~~Medial and lateral epicondylitis~~
 - ~~Olecranon bursitis~~
 - ~~Wrist/Hand~~
 - ~~Carpal tunnel~~
 - ~~Gamekeeper's thumb~~
 - ~~Boxer's fracture~~
 - ~~Finger deformities~~
- b. ~~Identify and discuss special tests used to assess injuries of the upper extremities.~~
 - ~~Empty can test~~
 - ~~Impingement test~~
 - ~~Apprehension test~~
 - ~~Elbow valgus stress test~~
- c. ~~In student groups, complete the tasks below for at least one of the injuries in 2.a.~~
 - ~~Demonstrate proper procedure for evaluation utilizing HOPS and SOAP notes.~~
 - ~~Research and develop a treatment plan.~~
 - ~~Develop a written, oral, or digital case study presentation discussing the injury, evaluation, and treatment plan chosen.~~

Enrichment:

- ~~Describe the phases of throwing.~~

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 12: Injuries to the Lower Extremities

Competencies and Suggested Objectives

1. Review and recognize the specific anatomy of the lower extremities related to sports injuries. ^{DOK+1}

a. Identify the bones and bony landmarks related to injuries of the lower extremities.

- Hip/Thigh

- Anterior and posterior iliac crest/spine
- Ischial tuberosity
- Greater trochanter of the femur

- Knee

- Medial and lateral femoral condyles
- Tibial plateau
- Tibial tuberosity
- Patellofemoral groove
- Joint line
- Proximal head of the fibula

- Ankle/Foot

- Medial and lateral malleolus
- Talus
- Calcaneus
- Styloid process
- Navicular
- Hallux

b. Identify the soft and connective tissues related to injuries of the lower extremities and their respective functions.

- Hip/Thigh

- Glutes
- Iliotibial (IT) band
- Adductor muscle group
- Quadriceps group (as a whole)
- Hamstring group (as a whole)

- Knee

- Anterior cruciate ligament (ACL)
- Posterior cruciate ligament (PCL)
- Medial collateral ligament (MCL)
- Lateral collateral ligament (LCL)
- Patella tendon
- Meniscus

- Ankle/Foot:

- Anterior tibialis
- Gastrocnemius
- Soleus
- Plantar fascia
- Lateral ankle ligaments (as a group)

- Deltoid ligament
- Peroneal tendons (as a group)
- e. Identify the nerve tissue related to injuries of the lower extremities.
 - Sciatic nerve

2. Discuss common injuries of the lower extremities. ^{DOK-3}

- a. Identify the common injuries and a given mechanism of each.
 - Hip/Thigh
 - Hip pointer
 - Labrum tear
 - Sciatica
 - Strains (e.g., hip flexor, quadriceps, hamstrings, groin)
 - Quad contusions
 - Knee
 - Sprains (ACL, MCL, LCL, PCL)
 - Meniscal tear
 - Patella tendonitis
 - Patella dislocation/subluxation
 - Ankle/Foot:
 - Plantar fasciitis
 - Turf toe
 - Lateral ankle sprain
 - Syndesmosis sprain
 - Achilles sprain
 - Foot fracture (Jones and Lisfranc)
- b. Identify and discuss special tests used to assess injuries to the lower extremities.
 - Thomas test
 - Anterior/posterior drawer
 - Valgus/Varus test
 - Talar tilt
- c. In student groups, complete the tasks below for at least one of the injuries in 2.a.
 - Demonstrate proper procedure for evaluation utilizing HOPS and SOAP notes.
 - Research and develop a treatment plan.
 - Develop a written, oral, or digital case study presentation discussing the injury, evaluation, and treatment plan chosen.

Enrichment:

- Identify pulse locations on the lower extremities.

*Refer to your **Teacher Resource Document** for resources and strategies. Click [HERE](#) and find your pathway to download it.

Unit 13: Basics of Training and Conditioning Techniques

Competencies and Suggested Objectives

1. Explain the principles of training and conditioning. ^{DOK-3}
 - a. Define components of fitness in relation to athletic performance.
 - Muscular strength
 - Muscle endurance
 - Cardiovascular endurance
 - Flexibility
 - Agility
 - Speed
 - Power
 - b. Research and discuss various training exercises for each of the fitness components in above and classify each exercise as aerobic or anaerobic.
 - Perform a baseline assessment on one of the components in 1.a., then develop a basic, short-term training plan that includes the concepts of overload principle, specificity, periodization, warm-up and cool down, and static and dynamic stretching.
2. Explain the importance of proper training techniques for reduction of injury. ^{DOK-2}
 - a. Compare and contrast proper and improper lifting techniques for various exercises and discuss the importance of proper lifting technique for the prevention of injury.
 - b. Explain the role that overtraining plays in the risk of injury.
3. Discuss how emerging technology has affected training and conditioning. ^{DOK-3}
 - a. Research and develop a presentation on how technology has affected fitness in both the general and athletic populations.

Enrichment:

- HOSA activity on healthy lifestyle

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 14: Nutrition in Sports

Competencies and Suggested Objectives
<p>1. Explain the importance of good nutrition in sports. ^{DOK-2}</p> <p>a. Identify the six classes of nutrients and provide examples of each.</p> <ul style="list-style-type: none">• Carbohydrates• Fats• Proteins• Vitamins• Minerals• Water <p>b. Develop a digital presentation explaining the importance of nutrition (pre-/post-activity and during activity) in regards to performance enhancement and injury recovery.</p>
<p>2. Differentiate between body weight and body composition along with the factors that influence both. ^{DOK-2}</p> <p>a. Research and discuss how nutrition affects body weight and body composition.</p> <p>b. Research and discuss how to measure body weight and calculate body fat percentage by using skin-fold calipers.</p>
<p>3. Identify what an eating disorder is and understand how eating disorders can challenge ideal activity performance. ^{DOK-2}</p> <p>a. Research and discuss the eating disorders below and how they relate to athletic performance.</p> <ul style="list-style-type: none">• Anorexia• Bulimia• Binge eating
<p>Enrichment:</p> <ul style="list-style-type: none">• Compare and contrast the diets of students and elite athletes.• Demonstrate 2.b. on willing classmates or athletic population.

*Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 15: Pharmacology and Drugs in Sports

Competencies and Suggested Objectives
<p>1. Identify safety guidelines associated with the proper use of medication. ^{DOK-1}</p> <ul style="list-style-type: none">— a. Research and discuss the various methods for drug administration:<ul style="list-style-type: none">• Oral• Topical/Transdermal• Inhalation• Sublingual• Intravenous• Intradermal• Intramuscular• Rectalb. Describe the basic process of pharmacokinetics relative to the processes of absorption, distribution, metabolism, and excretion.— c. Differentiate between classifications of common drugs used in sports, based on their pharmaceutical use.<ul style="list-style-type: none">• NSAIDs• Anti-fungal• Antibiotic• Analgesics
<p>2. Explore the legal concerns related to pharmacology in sports. ^{DOK-3}</p> <ul style="list-style-type: none">— a. Differentiate between administering and dispensing drugs from various medical professionals.— b. Research and debate the safety risk of approved and unapproved substances according to the FDA, NCAA, and IOC.— c. Discuss the importance and purpose of drug testing in athletes. Include illegal drugs and their consequences.
<p>Enrichment:</p> <ul style="list-style-type: none">• Discuss the federal drug schedule set forth by the FDA.• Discuss the opioid epidemic.

* Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

Unit 16: Employment Opportunities in Health Care

Competencies and Suggested Objectives
<p>1. Research current available jobs across the health care field to develop a chart that compares the following elements:^{DOK-1}</p> <ul style="list-style-type: none">• minimum education• certifications• minimum experience• job description/responsibilities• salary.
<p>2. Through a real job search, analyze differences in the online application requirements of various job postings.^{DOK-1}</p>
<p>3. Research and select a real job advertisement, then complete the tasks below.^{DOK-2}</p> <ul style="list-style-type: none">• Develop a cover letter to fit the job advertisement using terminology that reflects the culture and values specific to that company or clinic.• Create a résumé with fabricated elements to fit the real job advertisement. <i>*Note: this résumé is not to be used for a real job application, but for learning purposes only. Delete any fabricated elements before using it for a real job application.</i>
<p>4. Demonstrate real-world interview skills led by the instructor and/or advisory/craft committee members to include the following:^{DOK-2}</p> <ul style="list-style-type: none">• Aligned to a specific industry/job advertisement• Professional attire• Cover letter• Application and/or résumé
<p>5. Hand-write customized thank you letters to each member of the interview committee.^{DOK-1}</p>
<p>6. Complete documented project or activity artifacts in the ePortfolio according to the teacher-generated rubric.^{DOK-1}</p>
<p>Enrichment:</p> <ul style="list-style-type: none">• Conduct virtual interviews in addition to real-world interviews (e.g., via Skype, Facetime, FlipGrid, etc.).• Evaluate various career ladders for advancement in the health care field.

* Refer to your Teacher Resource Document for resources and strategies. Click [here](#) to download your pathway.

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: Orientation, Safety, and Communication		
	1.	Establish the expectations, policies, and procedures of the sports medicine program.
	2.	Review and implement proper safety procedures and protocols in the various sports medicine environments.
	3.	Review and implement proper communication and etiquette in the various sports medicine environments.
	4.	Utilize career resources to develop a comprehensive class/career portfolio.
Unit 2: The Sports Medicine Team		
	1.	Differentiate between the various organizations contributing to sports medicine.
	2.	Differentiate the roles of the sports medicine team.
	3.	Identify various employment settings for sports medicine personnel.
Unit 3: Health Care Administration		
	1.	Identify the administrative responsibilities of a health care professional.
	2.	Plan and conduct a pre-participation physical examination.
	3.	Analyze unique legal and ethical issues in sports medicine.
Unit 4: Protective Equipment and Techniques		
	1.	Identify, research, and discuss the governing bodies that set standards for safety and for protective equipment in sports.
	2.	Identify types of protective equipment mandated in sports for the head, chest, and lower extremity, and discuss the importance of proper application.
	3.	Discuss the importance of quality protective equipment for joints in sports.
	4.	Demonstrate the basic skills needed for taping in sports.
	5.	Describe the steps and techniques for casting.

Unit 5: First Aid in Sports	
1.	Discuss the necessary skills to provide first aid treatment.
2.	Describe the concepts for treating bleeding and the application of dressings and bandages.
3.	Describe the concepts for treating shock.
4.	Describe the concepts for treating musculoskeletal injuries.
5.	Describe the concepts for treating sudden illnesses.
6.	Describe the concepts for treating specific injuries.
Unit 6: Emergency Care in Sports	
1.	Describe the components of an emergency action plan (EAP).
2.	Perform skills obtained in training or certification for Basic Life Support for Health Care Providers.
3.	Describe the prevention, recognition, and treatment of various heat illnesses.
4.	Transport an injured victim safely and efficiently.
5.	In a role-play situation, demonstrate the steps involved in an on-the-field injury assessment according to the AHA.
Unit 7: Fundamental Concepts of Evaluation	
1.	Apply the basic anatomical concepts to sports-related injuries.
2.	Differentiate between HOPS(history, observation, palpitation, special test) and SOAP(subjective, objective, assessment, plan).
3.	Explain the characteristics of sports trauma.
4.	Explain the evaluation of injuries by diagnostic testing.
Unit 8: Therapeutic Rehabilitation and Modalities	
1.	Identify and discuss the presentation and duration of the three phases of musculoskeletal healing in acute and chronic injuries.
2.	Investigate the various types of therapeutic modalities.
3.	Demonstrate the proper procedures related to ambulation and assistive devices, according to HOSA standards.
4.	Identify and discuss the primary components of a rehabilitation program.
5.	Research and discuss the various components of range of motion (ROM).
6.	Research and discuss the various components of neuromuscular re-education and restoring muscular strength, endurance, and power.
Unit 9: Injuries to Head and Spine	
1.	Review and recognize the specific anatomy of the head and spine related to sports injuries.
2.	Discuss common injuries of the head and spine.

Unit 10: Injuries to Chest and Abdomen		
	1.	Review and recognize the specific anatomy of the chest and abdomen related to sports injuries.
	2.	Discuss common injuries of the chest and abdomen.
Unit 11: Injuries to Upper Extremities		
	1.	Review and recognize the specific anatomy of the upper extremities related to sports injuries.
	2.	Discuss common injuries of the upper extremities.
Unit 12: Injuries to Lower Extremities		
	1.	Review and recognize the specific anatomy of the lower extremities related to sports injuries.
	2.	Discuss common injuries of the lower extremities.
Unit 13: Basics of Training and Conditioning Techniques		
	1.	Explain the principles of training and conditioning.
	2.	Explain the importance of proper training techniques for the reduction of injury.
	3.	Discuss how emerging technology has affected training and conditioning.
Unit 14: Nutrition in Sports		
	1.	Explain the importance of good nutrition in sports.
	2.	Differentiate between body weight and body composition along with the factors that influence both.
	3.	Identify what an eating disorder is and understand how eating disorders can challenge ideal activity performance.
Unit 15: Pharmacology and Drugs in Sports		
	1.	Identify safety guidelines associated with the proper use of medication.
	2.	Explore the legal concerns related to pharmacology in sports.
Unit 16: Employment Opportunities in Health Care		
	1.	Research current available jobs across the health care field to develop a chart that compares minimum education, certifications, minimum experience, job description/responsibilities, and salary.
	2.	Through a real job search, analyze differences in online application requirements of various job postings.
	3.	Research and select a real job advertisement, then complete a cover letter and résumé with fabricated elements for that job.
	4.	Demonstrate real-world interview skills led by the instructor and/or advisory/craft committee members.
	5.	Hand write customized thank you letters to each member of the interview committee.
	6.	Complete documented project or activity artifacts in the ePortfolio according to the teacher-generated rubric.

~~Appendix A: Industry Standards National Athletic Trainers Association~~

NATA Secondary Course Crosswalk

	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-1.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-1.2	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-1.4	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-1.5	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X
NATA-2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-2.2	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-2.3	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-2.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-3.2	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-3.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-3.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-3.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-3.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-4.1	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
NATA-4.2	-	-	-	-	-	-	-	-	X	-	-	-	-	X	-	-	-
NATA-4.3	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
NATA-4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
NATA-4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-
NATA-4.6	-	-	-	-	-	-	-	-	X	-	-	-	-	X	-	-	-
NATA-5.1	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
NATA-5.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-5.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-6.1	Core	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-6.2	Core	-	-	-	-	-	-	X	-	X	X	X	X	-	-	-	-
NATA-6.3	Core	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-
NATA-6.4	Core	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
NATA-6.5	Core	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-6.6	Core	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-
NATA-6.7	Core	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-6.8	Core	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
NATA-6.9	Core	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
NATA-6.10	Core	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-6.11	Core	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-6.12	Core	-	-	-	-	-	-	-	-	-	X	-	-	-	-	-	-
NATA-6.13	Core	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-7.1	-	-	-	-	X	-	-	-	-	-	X	-	-	-	-	-	-
NATA-7.2	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
NATA-7.3	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
NATA-7.4	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
NATA-7.5	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
NATA-7.6	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
NATA-7.7	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
NATA-8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
NATA-8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-

NATA-8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
NATA-8.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
NATA-8.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-
NATA-9.1	-	-	-	-	-	-	-	X	X	X	X	X	X	-	-	-	-	-
NATA-9.2	-	-	-	-	-	-	-	X	-	X	X	X	X	-	-	-	-	-
NATA-9.3	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
NATA-9.4	-	-	-	-	-	-	-	X	-	X	X	X	X	-	-	-	-	-
NATA-9.5	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-	-
NATA-9.6	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
NATA-9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-10.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-10.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-10.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-10.5	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
NATA-11.2	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
NATA-11.3	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-
NATA-11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-11.5	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
NATA-11.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-12.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-12.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-12.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-12.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-13.1	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
NATA-13.2	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
NATA-13.3	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
NATA-14.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-
NATA-14.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-
NATA-14.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-
NATA-14.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	-
NATA-15.1	-	-	-	-	-	-	-	X	-	X	X	X	X	-	-	-	-	-
NATA-15.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NATA-15.3	-	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
NATA-15.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Unit 1 Investigating the Field of Sports medicine

- 1.1 Describe the historical foundations of athletic training.
- 1.2 Compare and contrast various professional organizations dedicated to athletic training and sports medicine.
- 1.3 Delineate the process for attaining national certification and state licensure for the athletic trainer.
- 1.4 List and differentiate between the roles and responsibilities of other health care professionals who make up the sports medicine team (e.g., physicians, physical therapists, occupational therapists, nurses, EMTs, etc.).
- 1.5 Analyze the different types of job opportunities and settings available to the athletic trainer as well as other members of the sports medicine team.

Unit 2 Understanding Concepts of Health Care Administration

- 2.1 Investigate the necessary components that make up a well-designed sports medicine facility.
- 2.2 List budgetary concerns.
- 2.3 Explain the legal importance of accurate, clear and up-to-date record keeping.
- 2.4 Create and analyze legal scenarios to consider as an administrator of an athletic health care facility in different settings.
- 2.5 Explain the difference between HIPAA and FERPA in relation to sharing medical information.

Unit 3 Analyzing Legal, Ethical and Insurance Considerations in Sports medicine

- 3.1 List and define the 4 components of negligence.
- 3.2 Analyze legal considerations for health care professionals.
- 3.3 Compare and contrast legal concepts of liability, negligence, supervision, and assumption of risks.
- 3.4 Differentiate between legal and ethical actions in a given scenario.

- 3.5 Differentiate between different types of medical insurance and be able to explain various terms associated with third-party reimbursement.
- 3.6 Determine the benefits of maintaining medical records to benefit the student athletes.
- 3.7 Discuss the importance of medical professionals obtaining National Provider Identifiers (NPIs)

Unit 4 Understanding the Basics of Training and Conditioning Techniques

- 4.1 Investigate the roles of the athletic trainer and the strength and conditioning coach on an athlete's fitness.
- 4.2 Explain the principles of conditioning.
- 4.3 Explain the role that overtraining plays in the risk of injury.
- 4.4 Design goals of a training and conditioning program for a specific sport/position on a team.
- 4.5 List the equipment needed for a comprehensive training and conditioning program.
- 4.6 Differentiate between the types of stretching and determine which is best in a given scenario.

Unit 5 Assessing Environmental Factors That Lead to Injury

- 5.1 Recognize atmospheric conditions that contribute to environmental injury.
- 5.2 Explain the environmental factors to be considered when caring for athletes.
- 5.3 Determine an appropriate SPF for specific individuals.
- 5.4 Explain the complications circadian dysrhythmia could have for various levels of athletes.
- 5.5 Discuss the importance of an EAP and policy for thunder and lightning as it relates to athletics.
- 5.6 Determine the risks associated with repeated overexposure to the sun.

Unit 6 Human Anatomy and Physiology: Discussion on the Following Body Systems

- 6.1 Integumentary
- 6.2 Skeletal
- 6.3 Nervous
- 6.4 Cardiovascular
- 6.5 Endocrine
- 6.6 Muscular
- 6.7 Lymphatic
- 6.8 Respiratory
- 6.9 Urinary
- 6.10 Excretory
- 6.11 Reproductive
- 6.12 Digestive
- 6.13 Immune

Unit 7 Understanding Basic Taping, Wrapping and Bracing for Injuries

- 7.1 List considerations to be given when properly fitting headgear.
- 7.2 Debate the advantages and disadvantages of customized versus commercial protective devices.
- 7.3 Identify the types of marketed and fabricated bracing devices as well as techniques.
- 7.4 Debate the advantages and disadvantages of taping versus bracing.
- 7.5 Determine which elastic wraps and wrapping procedures are most appropriate for specific scenarios.
- 7.6 Differentiate between different types of adhesive and cohesive tape, and determine what application is best for a specific scenario
- 7.7 Identify 4 basic tape applications and the rationale of each.

Unit 8 Understanding Sports Nutrition, Supplementation and Substance Abuse

- 8.1 List the six classes of nutrients and give an example in each class.
- 8.2 Explain the importance of good nutrition in enhancing performance and injury prevention.
- 8.3 Differentiate between body weight and body composition along with the factors that influence both of them.
- 8.4 Identify methods to calculate percent body fat and issues associated with each.
- 8.5 Identify safe methods for weight loss as well as weight gain.

Unit 9 Identifying Basic Tissue Response and Common Injuries

- 9.1 Describe and illustrate the three phases of the healing process as it pertains to various soft tissue structures, including cartilage, ligament, muscle, tendon, and nerve.

- 9.2 Explain the physiology and psychology of pain.
- 9.3 Differentiate between sprains and strains, and differentiate between 1st, 2nd, and 3rd degree injuries.
- 9.4 Illustrate various types of fractures and explain the forces required to produce each one.
- 9.5 List the mechanical properties of tissue as they pertain to the stress-strain curve.
- 9.6 Illustrate and describe the 5 types of tissue loading.
- 9.7 Explain the relationship between poor body mechanics and injury potential.

Unit 10 Recognizing and Preventing the Spread of Blood Borne Pathogens

- 10.2 Investigate various blood-borne pathogens.
- 10.3 Explain the OSHA blood-borne pathogen standard.
- 10.4 Outline the components of a written exposure plan.
- 10.5 Explain basic wound care procedures.

Unit 11 Determining Appropriate Emergency Injury Management

- 11.2 Determine the components of an EAP.
- 11.3 Investigate the acute injury management techniques.
- 11.4 List and describe the signs and symptoms of a concussion and demonstrate the recognition of them.
- 11.5 Explain the steps involved in performing CPR.
- 11.6 Recognize the common causes of cardiopulmonary complications in sports.

Unit 12 Investigating the Psychological Aspects of Injury

- 12.1 Investigate the psychological reactions one may see in the ill or injured athlete.
- 12.4 Determine the reasons why social support is important to the injured athlete.
- 12.3 Describe the role a health care provider plays when dealing with various psychological reactions.
- 12.4 Differentiate between a counselor, a psychologist and a psychiatrist.

Unit 13 Introduction to Rehabilitation and Modalities

- 13.1 List the safety procedures with each type of modality.
- 13.2 Investigate the role of various rehabilitation professionals.
- 13.3 Understand the five phases of rehabilitation.

Unit 14 Basic Pharmacology

- 14.1 Describe the difference between over-the-counter medications and prescription medications.
- 14.2 Discuss the different classifications of common medications.
- 14.3 Identify safety guidelines associated with proper medication use.
- 14.4 List socially used drugs and problems associated with athletics and performance.

Unit 15 Fundamental Concepts of Evaluation

- 15.1 Differentiate between HOPS and SOAP.
- 15.2 Illustrate the “anatomical position.”
- 15.3 Differentiate between manual muscle testing and resistive range of motion testing.
- 15.4 Examine cultural differences as it pertains to the manner in which an evaluation is conducted.

Appendix B: Industry Standards Board of Certification

	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Standard/Code	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
S1	-	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-	X
S2	-	-	-	-	X	-	X	-	-	-	-	-	-	-	-	-	-
S3	-	-	-	-	-	X	X	-	-	X	X	X	X	-	-	-	-
S4	-	-	-	X	-	-	-	X	-	X	X	X	X	-	-	-	-
S5	-	-	-	-	X	X	-	-	X	X	X	X	X	-	-	-	-
S6	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-
S7	-	-	-	X	-	-	-	-	-	X	X	X	X	-	-	-	-

BOC Standards of Professional Practice

BOC S1—Direction

The Athletic Trainer renders service or treatment under the direction of, or in collaboration with a physician, in accordance with their training and the state's statutes, rules and regulations.

BOC S2—Prevention

The Athletic Trainer implements measures to prevent and/or mitigate injury, illness and long term disability.

BOC S3—Immediate Care

The Athletic Trainer provides care procedures used in acute and/or emergency situations, independent of setting.

BOC S4—Examination, Assessment, and Diagnosis

The Athletic Trainer utilizes patient history and appropriate physical examination procedures to determine the patient's impairments, diagnosis, level of function and disposition.

BOC S5—Therapeutic Intervention

The Athletic Trainer determines appropriate treatment, rehabilitation and/or reconditioning strategies. Intervention program objectives include long and short term goals and an appraisal of those which the patient can realistically be expected to achieve from the program. Appropriate patient-centered outcomes assessments are utilized to document efficacy of interventions.

BOC S6—Program Discontinuation

The Athletic Trainer may recommend discontinuation of the intervention program at such time the patient has received optimal benefit of the program. A final assessment of the patients' status is included in the discharge note.

BOC S7—Organization and Administration

The Athletic Trainer documents all procedures and services in accordance with local, state and federal laws, rules and guidelines.

Appendix C: 21st Century Skills¹

	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CS1	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CS2	-	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X
CS3	-	X	-	X	X	-	-	-	-	-	-	-	-	-	-	-	-
CS4	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-
CS5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CS6	-	X	-	X	-	X	X	-	-	-	-	-	-	X	X	-	-
CS7	-	-	-	X	X	X	X	-	X	X	X	X	X	X	X	X	X
CS8	-	X	X	X	X	X	X	X	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
CS10	-	X	X	X	-	-	-	-	-	X	X	X	X	X	X	X	X
CS11	-	X	-	X	X	-	-	-	X	X	X	X	X	X	X	X	X
CS12	-	X	X	X	X	X	X	X	X	X	X	X	X	X	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	X	X	X	X	X	X	X	X	X
CS15	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CS16	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

CS1- 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. Demonstrate knowledge and understanding of the environment and the circumstances and conditions affecting it, particularly as relates to air, climate, land, food, energy, water, and ecosystems.
2. Demonstrate knowledge and understanding of society's impact on the natural world (e.g., population growth, population development, resource consumption rate, etc.).

¹ 21st century skills. (n.d.). Washington, DC: Partnership for 21st Century Skills.

3. Investigate and analyze environmental issues, and make accurate conclusions about effective solutions.
4. Take 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

~~Appendix D: International Society for Technology in Education Standards (ISTE)~~

	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T1	-	X	-	X	-	-	-	-	-	-	-	-	-	X	-	-	X
T2	-	X	X	X	-	-	-	-	-	-	-	-	-	X	-	X	X
T3	-	-	X	X	X	-	-	-	-	X	X	X	X	X	X	X	X
T4	-	-	-	X	-	-	-	-	-	-	-	-	-	X	-	-	-
T5	-	-	-	X	-	-	-	-	-	X	X	X	X	X	-	-	-
T6	-	X	X	X	X	-	X	-	X	X	X	X	X	X	X	-	X
T7	-	X	X	X	X	-	-	-	-	-	-	-	-	X	-	X	X

- ~~T1 — Empowered Learner~~
- ~~T2 — Digital Citizen~~
- ~~T3 — Knowledge Constructor~~
- ~~T4 — Innovative Designer~~
- ~~T5 — Computational Thinker~~
- ~~T6 — Creative Communicator~~
- ~~T7 — Global Collaborator~~

~~T1 — Empowered Learner~~

~~Students leverage technology to take an active role in choosing, achieving and demonstrating competency in their learning goals, informed by the learning sciences. Students:~~

- ~~a. — Articulate and set personal learning goals, develop strategies leveraging technology to achieve them and reflect on the learning process itself to improve learning outcomes.~~
- ~~b. — Build networks and customize their learning environments in ways that support the learning process.~~
- ~~c. — Use technology to seek feedback that informs and improves their practice and to demonstrate their learning in a variety of ways.~~
- ~~d. — Understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.~~

~~T2 — Digital Citizen~~

~~Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical. Students:~~

- ~~a. — Cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.~~
- ~~b. — Engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.~~
- ~~c. — Demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.~~
- ~~d. — Manage their personal data to maintain digital privacy and security and are aware of data collection technology used to track their navigation online.~~

~~T3 — Knowledge Constructor~~

~~Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others. Students:~~

- ~~a. — Plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.~~
- ~~b. — Evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.~~
- ~~c. — Curate information from digital resources using a variety of tools and methods to create collections of artifacts that demonstrate meaningful connections or conclusions.~~

- d. Build knowledge by actively exploring real-world issues and problems, developing ideas and theories and pursuing answers and solutions.

T4—Innovative Designer

Students use a variety of technologies within a design process to identify and solve problems by creating new, useful or imaginative solutions. Students:

- a. Know and use a deliberate design process for generating ideas, testing theories, creating innovative artifacts or solving authentic problems.
- b. Select and use digital tools to plan and manage a design process that considers design constraints and calculated risks.
- c. Develop, test and refine prototypes as part of a cyclical design process.
- d. Exhibit a tolerance for ambiguity, perseverance and the capacity to work with open-ended problems.

T5—Computational Thinker

Students develop and employ strategies for understanding and solving problems in ways that leverage the power of technological methods to develop and test solutions. Students:

- a. Formulate problem definitions suited for technology-assisted methods such as data analysis, abstract models and algorithmic thinking in exploring and finding solutions.
- b. Collect data or identify relevant data sets, use digital tools to analyze them, and represent data in various ways to facilitate problem solving and decision making.
- c. Break problems into component parts, extract key information, and develop descriptive models to understand complex systems or facilitate problem solving.
- d. Understand how automation works and use algorithmic thinking to develop a sequence of steps to create and test automated solutions.

T6—Creative Communicator

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals. Students:

- a. Choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.
- b. Create original works or responsibly repurpose or remix digital resources into new creations.
- c. Communicate complex ideas clearly and effectively by creating or using a variety of digital objects such as visualizations, models or simulations.
- d. Publish or present content that customizes the message and medium for their intended audiences.

T7—Global Collaborator

Students use digital tools to broaden their perspectives and enrich their learning by collaborating with others and working effectively in teams locally and globally. Students:

- a. Use digital tools to connect with learners from a variety of backgrounds and cultures, engaging with them in ways that broaden mutual understanding and learning.
- b. Use collaborative technologies to work with others, including peers, experts or community members, to examine issues and problems from multiple viewpoints.
- c. Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.
- d. Explore local and global issues and use collaborative technologies to work with others to investigate solutions.

Appendix E: MS CCRS — Human Anatomy and Physiology

	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
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Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 1.1	-	-	-	-	-	-	X	X	-	X	X	X	X	-	-	-	-
HAP 1.2	-	-	-	-	-	X	X	-	-	X	X	X	X	-	-	-	-
HAP 1.3	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-
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HAP 2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 2.3*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 3.1	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
HAP 3.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 3.3	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
HAP 3.4*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 4.1	-	-	-	-	-	X	-	X	-	X	X	X	X	-	-	-	-
HAP 4.2	-	-	-	-	-	-	-	X	-	X	X	X	X	-	-	-	-
HAP 4.3	-	-	-	-	-	-	-	X	-	X	X	X	X	-	-	-	-
HAP 4.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 4.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 4.6	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
HAP 4.7*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 5.1	-	-	-	-	-	X	-	-	-	X	X	X	X	-	-	-	-
HAP 5.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 5.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 5.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 5.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 5.7	-	-	-	-	-	X	-	-	-	X	X	X	X	-	-	-	-
HAP 5.8*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 6.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 6.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 6.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 6.5*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 6.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 6.7	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
HAP 6.8	-	-	-	-	-	-	-	-	-	X	X	X	X	-	-	-	-
HAP 6.9*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 7.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 7.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 7.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 7.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 7.5*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 8.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 8.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 8.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 8.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 8.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 9.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 9.3	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
HAP 9.4*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 10.1	-	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-
HAP 10.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 10.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 10.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 10.6	-	-	-	-	-	X	-	-	-	-	-	-	-	-	-	-	-
HAP 10.7*	-	-	-	-	-	-	-	-	-	-	-	-	X	-	-	-	-
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HAP 11.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 11.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 11.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 11.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 12.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 12.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 12.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 12.4*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 12.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 13.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 13.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 13.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 13.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 13.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 13.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 13.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 13.8*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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HAP 14.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 14.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 14.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 14.4*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 14.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HAP 14.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

College and Career Ready Anatomy and Physiology

HAP.1 Students will demonstrate an understanding of how anatomical structures and physiological functions are organized and described using anatomical position-

HAP.1.1 Apply appropriate anatomical terminology when explaining the orientation of regions, directions, and body planes or sections.

HAP.1.2 Locate organs and their applicable body cavities and systems.

HAP.1.3 Investigate the interdependence of the various body systems to each other and to the body as a whole.

HAP.2 Students will demonstrate an understanding of the relationship of cells and tissues that form complex structures of the body-

HAP.2.1 Analyze the characteristics of the four main tissue types: epithelial, connective, muscle, and nervous. Examine tissues using microscopes and other various technologies. HAP.2.2 Construct a model to

demonstrate how the structural organization of cells in a tissue relates to the specialized function of that tissue.

HAP.2.3 Enrichment: Use an engineering design process to research and develop medications (i.e., targeted cancer therapy drugs) that target uncontrolled cancer cell reproduction.

HAP.3 Students will investigate the structures and functions of the integumentary system, including the cause and effect of diseases and disorders.

HAP.3.1 Identify structures and explain the functions of the integumentary system, including layers of skin, accessory structures, and types of membranes.

HAP.3.2 Investigate specific mechanisms (e.g., feedback and temperature regulation) through which the skin maintains homeostasis.

HAP.3.3 Research and analyze the causes and effects of various pathological conditions (e.g., burns, skin cancer, bacterial/viral infections, and chemical dermatitis).

HAP.3.4 Enrichment: Use an engineering design process to design and model/simulate effective treatments for skin disorders (e.g., tissue grafts).*

HAP.4 Students will investigate the structures and functions of the skeletal system including the cause and effect of diseases and disorders.

HAP.4.1 Use models to compare the structure and function of the skeletal system. HAP.4.2 Develop and use models to identify and classify major bones as part of the appendicular or axial skeleton.

HAP.4.3 Identify and classify types of joints and their movement.

HAP.4.4 Demonstrate an understanding of the growth and development of the skeletal system, differentiating between endochondral and intramembranous ossification. HAP.4.5 Construct explanations detailing how mechanisms (e.g., Ca^{2+} regulation) are used by the skeletal system to maintain homeostasis.

HAP.4.6 Research and analyze various pathological conditions (e.g., bone fractures, osteoporosis, bone cancers, various types of arthritis, and carpal tunnel syndrome).

HAP.4.7 Enrichment: Use an engineering design process to develop, model, and test effective treatments for bone disorders (i.e., prosthetics).*

HAP.5 Students will investigate the structures and functions of the muscular system, including the cause and effect of diseases and disorders.

HAP.5.1 Develop and use models to illustrate muscle structure, muscle locations and groups, actions, origins, and insertions.

HAP.5.2 Describe the structure and function of the skeletal muscle fiber and the motor unit.

HAP.5.3 Explain the molecular mechanism of muscle contraction and relaxation. HAP.5.4 Use models to locate the major muscles and investigate the movements controlled by each muscle.

HAP.5.5 Compare and contrast the anatomy and physiology of the three types of muscle tissue.

HAP.5.6 Use technology to plan and investigate that demonstrates the physiology of muscle contraction, muscle fatigue, or muscle tone. Collect and analyze data to interpret results, then explain and communicate conclusions.

HAP.5.7 Research and analyze the causes and effects of various pathological conditions, (e.g., fibromyalgia, muscular dystrophy, cerebral palsy, muscle cramps/strains, and tendonitis).

HAP.5.8 Enrichment: Use an engineering design process to develop effective ergonomic devices to prevent muscle fatigue and strain (e.g., carpal tunnel, exoskeletons for paralysis, or training plans to prevent strains/sprains/cramps).*

HAP. 6 Students will investigate the structures and functions of the nervous system, including the cause and effect of diseases and disorders.

HAP.6.1 Describe and evaluate how the nervous system functions and interconnects with all other body systems.

HAP.6.2 Analyze the structure and function of neurons and their supporting neuroglia cells (e.g. astrocytes, oligodendrocytes, Schwann cells, microglial).

HAP.6.3 Discuss the structure and function of the brain and spinal cord.

HAP.6.4 Compare and contrast the structures and functions of the central and peripheral nervous systems. Investigate how the systems interact to maintain homeostasis (e.g., — reflex responses, sensory responses).

HAP.6.5 Enrichment: Plan and conduct an experiment to test reflex response rates under varying conditions. Using technology, construct graphs in order to analyze and interpret data to explain and communicate conclusions.

HAP.6.6 Describe the major characteristics of the autonomic nervous system. Contrast the roles of the sympathetic and parasympathetic nervous systems in maintaining homeostasis.

HAP.6.7 Describe the structure and function of the special senses (i.e., vision, hearing, taste, and olfaction).

HAP.6.8 Research and analyze the causes and effects of various pathological conditions (e.g., addiction, depression, schizophrenia, Alzheimer's, sports-related chronic traumatic encephalopathy [CTE], dementia, chronic migraine, stroke, and epilepsy).

HAP.6.9 Enrichment: Use an engineering design process to develop, model, and test preventative devices for neurological injuries and/or disorders (e.g., concussion-proof helmets or possible medications for addiction and depression).*

HAP.7 Students will demonstrate an understanding of the major organs of the endocrine system and the associated hormonal production and regulation.

HAP.7.1 Obtain, evaluate, and communicate information to illustrate that the endocrine glands secrete hormones that help the body maintain homeostasis through feedback mechanisms.

HAP.7.2 Discuss the function of each endocrine gland and the various hormones secreted.

HAP.7.3 Model specific mechanisms through which the endocrine system maintains homeostasis (e.g., insulin/glucagon and glucose regulation; T₃ / T₄ and metabolic rates; calcitonin/parathyroid and calcium regulation; antidiuretic hormone and water balance; growth hormone; and cortisol and stress).

HAP.7.4 Research and analyze the effects of various pathological conditions (e.g., diabetes mellitus, pituitary dwarfism, Graves' disease, Cushing's syndrome, hypothyroidism, and obesity).

HAP.7.5 Enrichment: Use an engineering design process to develop effective treatments for endocrine disorders (e.g., methods to regulate hormonal imbalance).*

HAP.8 Students will investigate the structures and functions of the male and female reproductive system, including the cause and effect of diseases and disorders.

HAP.8.1 Compare and contrast the structure and function of the male and female reproductive systems.

HAP.8.2 Describe the male reproductive anatomy and relate structure to sperm production and release.

HAP.8.3 Describe the female reproductive anatomy and relate structure to egg production and release.

HAP.8.4 Construct explanations detailing the role of hormones in the regulation of sperm and egg development. Analyze the role of negative feedback in regulation of the female menstrual cycle and pregnancy.

HAP.8.5 Evaluate and communicate information about various contraceptive methods to prevent fertilization and/or implantation.

HAP.8.6 Describe the changes that occur during embryonic/fetal development, birth, and the growth and development from infancy, childhood, and adolescence to adult.

HAP.8.7 Research and analyze the causes and effects of various pathological conditions (e.g., infertility, ovarian cysts, endometriosis, sexually transmitted diseases, and ectopic pregnancy). Research current treatments for infertility.

HAP.9 Students will analyze the structure and functions of blood and its role in maintaining homeostasis.

HAP.9.1 Describe the structure, function, and origin of the cellular components and plasma components of blood.

HAP.9.2 Distinguish the cellular difference between the ABO blood groups and investigate blood type differences utilizing antibodies to determine compatible donors and recipients.

HAP.9.3 Research and analyze the causes and effects of various pathological conditions (e.g., anemia, malaria, leukemia, hemophilia, and blood doping).

HAP.9.4 Enrichment: Use an engineering design process to develop effective treatments for blood disorders (e.g., methods to regulate blood cell counts or blood doping tests).*

HAP.10 Students will investigate the structures and functions of the cardiovascular system, including the cause and effect of diseases and disorders.

HAP.10.1 Design and use models to investigate the functions of the organs of the cardiovascular system.

HAP.10.2 Describe the flow of blood through the pulmonary system and systemic circulation.

- HAP.10.3 Investigate the structure and function of different types of blood vessels (e.g., arteries, capillaries, veins). Identify the role each plays in the transport and exchange of materials.
- HAP.10.4 Demonstrate the role of valves in regulating blood flow.
- HAP.10.5 Plan and investigate to test the effects of various stimuli on heart rate and/or blood pressure. Construct graphs to analyze data and communicate conclusions.
- HAP.10.6 Research and analyze the effects of various pathological conditions (e.g., hypertension, myocardial infarction, mitral valve prolapse, varicose veins, and arrhythmia).
- HAP.10.7 Enrichment: Use an engineering design process to develop, model, and test effective treatments for cardiovascular diseases (e.g., methods to regulate heart rate, artificial replacement valves, open blood vessels, or strengthening leaky valves).*

HAP. 11 Students will investigate the structures and functions of the lymphatic system, including the cause and effect of diseases and disorders.

- HAP.11.1 Analyze the functions of leukocytes, lymph, and lymphatic organs in the immune system.
- HAP.11.2 Compare the primary functions of the lymphatic system and its relationship to the cardiovascular system.
- HAP.11.3 Compare and contrast the body's non-specific and specific lines of defense, including an analysis of the roles of various leukocytes: basophils, eosinophils, neutrophils, monocytes, and lymphocytes.
- HAP.11.4 Correlate the functions of the spleen, thymus, lymph nodes, and lymphocytes to the development of immunity.
- HAP.11.5 Differentiate the role of B lymphocytes and T lymphocytes in the development of humoral and cell-mediated immunity and primary and secondary immune responses.
- HAP.11.6 Investigate various forms of acquired and passive immunity (e.g., fetal immunity, breastfed babies, vaccinations, and plasma donations).
- HAP.11.7 Research and analyze the causes and effects of various pathological conditions (e.g., viral infections, auto-immune disorders, immunodeficiency disorders, and lymphomas).

HAP. 12 Students will investigate the structures and functions of the respiratory system, including the cause and effect of diseases and disorders.

- HAP.12.1 Design and use models to illustrate the functions of the organs of the respiratory system.
- HAP.12.2 Describe structural adaptations of the respiratory tract and relate these structural features to the function of preparing incoming air for gas exchange at the alveolus.
- HAP.12.3 Identify the five mechanics of gas exchange: pulmonary ventilation, external respiration, transport gases, internal respiration, and cellular respiration.
- HAP.12.4 Enrichment: Use an engineering design process to develop a model of the mechanisms that support breathing, and illustrate the inverse relationship between volume and pressure in the thoracic cavity.*
- HAP.12.5 Research and analyze the causes and effects of various pathological conditions (e.g., asthma, bronchitis, pneumonia, and COPD).
- HAP.12.6 Research and discuss new environmental causes of respiratory distress (e.g., e-cigarettes, environmental pollutants, and changes in inhaled gas composition).

HAP.13 Students will investigate the structures and functions of the digestive system, including the cause and effect of diseases and disorders.

- HAP.13.1 Analyze the structure-function relationship in organs of the digestive system.
- HAP.13.2 Use models to describe structural adaptations present in each organ of the tract and correlate the structures to specific processing of food at each stage (e.g., types of teeth; muscular, elastic wall and mucous lining of the stomach; villi and microvilli of the small intestine; and sphincters along the digestive tract).
- HAP.13.3 Identify the accessory organs (i.e., salivary glands, liver, gallbladder, and pancreas) for digestion and describe their function.
- HAP.13.4 Plan and conduct an experiment to illustrate the necessity of mechanical digestion for efficient chemical digestion.
- HAP.13.5 Research and analyze the activity of digestive enzymes within different organs of the digestive tract, connecting enzyme function to environmental factors such as pH.
- HAP.13.6 Evaluate the role of hormones (i.e., gastrin, leptin, and insulin) in the regulation of hunger and satiety/fullness.

HAP.13.7 Research and analyze the causes and effects of various pathological conditions (e.g., GERD/acid reflux, stomach ulcers, lactose intolerance, irritable bowel syndrome, gallstones, appendicitis, and hormonal imbalances and obesity).

HAP.13.8 Enrichment: Use an engineering design process to develop effective treatments for gastrointestinal diseases (e.g., methods to regulate stomach acids or soothe ulcers, treat food intolerance, and dietary requirements/modifications).*

HAP.14 Students will investigate the structures and functions of the urinary system, including the cause and effect of diseases and disorders:

HAP.14.1 Understand the structure and function of the urinary system in relation to maintenance of homeostasis.

HAP.14.2 Describe the processes of filtration and selective reabsorption within the nephrons as it relates to the formation of urine and excretion of excess materials in the blood.

HAP.14.3 Investigate relationship between urine composition and the maintenance of blood sugar, blood pressure, and blood volume.

HAP.14.4 Enrichment: Conduct a urinalysis to compare the composition of urine from various “patients.”

HAP.14.5 Develop and use models to illustrate the path of urine through the urinary tract. HAP.14.6 Research and analyze the causes and effects of various pathological conditions and other kidney abnormalities (e.g., kidney stones, urinary tract infections, gout, dialysis, and incontinence).

Appendix F: MS-CCRS – English Language Arts

	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
-																	
Standard	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.9.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.9.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.9.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.9.4	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
W.9.5	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
W.9.6	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
W.9.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.9.8	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	-	X
W.9.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.9.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SL.9.1	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SL.9.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SL.9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SL.9.4	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	-	X
SL.9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SL.9.6	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L.9.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.9.2	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L.9.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.9.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.9.6	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RH.9-10.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.9-10.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.9-10.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.9-10.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.9-10.3	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X	X	-
RST.9-10.4	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
RST.9-10.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.9-10.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.9-10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.9-10.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.9-10.9	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X
RST.9-10.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHST.9-10.1	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	-	-
WHST.9-10.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHST.9-10.3	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
WHST.9-10.5	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
WHST.9-10.6	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
WHST.9-10.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHST.9-10.8	-	-	-	X	X	-	-	-	X	X	X	X	X	X	X	-	X
WHST.9-10.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

WHST.9-10.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.11.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.11.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.11.7	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
RI.11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.11.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RI.11.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.11.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.11.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.11.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.11.4	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
W.11.5	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
W.11.6	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
W.11.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.11.8	-	-	-	X	X	-	-	-	X	X	X	X	X	X	X	X	X
W.11.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
W.11.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SL.11.1	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SL.11.2	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
SL.11.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SL.11.4	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
SL.11.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SL.11.6	-	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
L.11.1a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.11.1b	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.11.2a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.11.3a	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
L.11.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RH.11-12.9	-	-	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
RH.11-12.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RST.11-12.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHST.11-12.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHST.11-12.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
WHST.11-12.6	-	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X
WHST.11-12.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

College and Career Ready English I

Reading Literature Key Ideas and Details

RL.9.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

RL.9.2 Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.

RL.9.3 Analyze how complex characters (e.g., those with multiple or conflicting motivations) develop over the course of a text, interact with other characters, and advance the plot or develop the theme.

Craft and Structure

RL.9.4 Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone (e.g., how the language evokes a sense of time and place; how it sets a formal or informal tone).

RL.9.5 Analyze how an author's choices concerning how to structure a text, order events within it (e.g., parallel plots), and manipulate time (e.g., pacing, flashbacks) create such effects as mystery, tension, or surprise.

RL.9.6 Analyze a particular point of view or cultural experience reflected in a work of literature from outside the United States, drawing on a wide reading of world literature.

Integration of Knowledge and Ideas

RL.9.7 Analyze the representation of a subject or a key scene in two different artistic mediums, including what is emphasized or absent in each treatment (e.g., Auden's "Musée des Beaux Arts" and Breughel's Landscape with the Fall of Icarus).

RL.9.8 Not applicable to literature.

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RL.9.9 Analyze how an author draws on and transforms source material in a specific work (e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare).

Range of Reading and Level of Text Complexity

RL.9.10 By the end of grade 9, read and comprehend literature, including stories, dramas, and poems, in the grades 9–10 text complexity band proficiently, with scaffolding as needed at the high end of the range.

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Reading Informational Text Key Ideas and Details

RI.9.3 Analyze how the author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.

Craft and Structure

RI.9.5 Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text (e.g., a section or chapter).

RI.9.6 Determine an author's point of view or purpose in a text and analyze how an author uses rhetoric to advance that point of view or purpose.

Integration of Knowledge and Ideas

RI.9.7 Analyze various accounts of a subject told in different mediums (e.g., a person's life story in both print and multimedia), determining which details are emphasized in each account.

RI.9.8 Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning.

RI.9.9 Analyze seminal U.S. documents of historical and literary significance (e.g., Washington's Farewell Address, the Gettysburg Address, Roosevelt's Four Freedoms speech, King's "Letter from Birmingham Jail"), including how they address related themes and concepts.

College and Career Ready English I

Writing Text Types and Purposes

W.9.1 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

W.9.1a Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence.

W.9.1b Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level and concerns.

W.9.1c Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

W.9.1d Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

W.9.1e Provide a concluding statement or section that follows from and supports the argument presented.

W.9.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

W.9.2a Introduce a topic; organize complex ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

W.9.2b Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

W.9.2c Use appropriate and varied transitions to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

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W.9.2d Use precise language and domain-specific vocabulary to manage the complexity of the topic.

W.9.2e Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

W.9.2f Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

W.9.3 Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

W.9.3a Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.

W.9.3b Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters.

W.9.3c Use a variety of techniques to sequence events so that they build on one another to create a coherent whole.

W.9.3d Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.

W.9.3e Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

Production and Distribution of Writing

W.9.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1–3 above.)

W.9.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grades 9–10.)

W.9.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Research to Build and Present Knowledge

W.9.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.

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W.9.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.

W.9.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.

W.9.9a Apply grades 9–10 Reading standards to literature (e.g., “Analyze how an author draws on and transforms source material in a specific work [e.g., how Shakespeare treats a theme or topic from Ovid or the Bible or how a later author draws on a play by Shakespeare]”).

W.9.9b Apply grades 9–10 Reading standards to literary nonfiction (e.g., “Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is valid and the evidence is relevant and sufficient; identify false statements and fallacious reasoning”).

Range of Writing

W.9.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audience.

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SL.9.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.

SL.9.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.

SL.9.1b Work with peers to set rules for collegial discussions and decision making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed.

SL.9.1c Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions.

SL.9.1d Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

SL.9.2 Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.

SL.9.3 Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence. —

Presentation of Knowledge and Ideas

SL.9.4 Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.

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SL.9.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

SL.9.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grades 9–10 Language standards 1 and 3 for specific expectations.)

College and Career Ready English I

Language

Conventions of Standard English

L.9.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

L.9.1a Use parallel structure.*

L.9.1b Use various types of phrases (noun, verb, adjectival, adverbial, participial, prepositional, absolute) and clauses (independent, dependent; noun, relative, adverbial) to convey specific meanings and add variety and interest to writing or presentations. ———

L.9.2 Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

L.9.2a Use a semicolon (and perhaps a conjunctive adverb) to link two or more closely related independent clauses.

L.9.2b Use a colon to introduce a list or quotation.

L.9.2c Spell correctly

Knowledge of Language

L.9.3 Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening

L.9.3a Write and edit work so that it conforms to the guidelines in a style manual (e.g., MLA Handbook, Turabian's Manual for Writers) appropriate for the discipline and writing type.

Vocabulary Acquisition and Use

L.9.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.

L.9.4a Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.

L.9.4b Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy).

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L.9.4c Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology.

L.9.4d Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

L.9.5 Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

L.9.5a Interpret figures of speech (e.g., euphemism, oxymoron) in context and analyze their role in the text.

L.9.5b Analyze nuances in the meaning of words with similar denotations.

L.9.6 Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

College and Career Ready English II

Range of Reading and Level of Text Complexity

RL.10.10 By the end of grade 10, read and comprehend literature, including stories, dramas, and poems, at the high end of the grades 9–10 text complexity band independently and proficiently.

Grades 9–10: Literacy in History/SS

Reading in History/Social Studies Key Ideas and Details

RH.9–10.1 Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.

RH.9–10.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.

RH.9–10.3 Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.

Craft and Structure

RH.9–10.4 Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.

~~RH.9-10.5 Analyze how a text uses structure to emphasize key points or advance an explanation or analysis.~~

~~RH.9-10.6 Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.~~

Integration of Knowledge and Ideas

~~RH.9-10.7 Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.~~

~~RH.9-10.8 Assess the extent to which the reasoning and evidence in a text support the author's claims.~~

~~RH.9-10.9 Compare and contrast treatments of the same topic in several primary and secondary sources.~~

Range of Reading and Level of Text Complexity

~~RH.9-10.10 By the end of grade 10, read and comprehend history/social studies texts in the grades 9–10 text complexity band independently and proficiently.~~

Grades 9–10: Literacy in Science and Technical Subjects

Reading in Science and Technical Subjects Key Ideas and Details

~~RST.9-10.1 Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.~~

~~RST.9-10.2 Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.~~

~~RST.9-10.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.~~

Craft and Structure

~~RST.9-10.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics.~~

~~RST.9-10.5 Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).~~

~~RST.9-10.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.~~

Integration of Knowledge and Ideas

~~RST.9-10.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.~~

~~RST.9-10.8 Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.~~

~~RST.9-10.9 Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.~~

Range of Reading and Level of Text Complexity

~~RST.9-10.10 By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently.~~

Grades 9–10: Writing in History/SS, Science, and Technical Subjects

Writing Text Types and Purposes

~~WHST.9-10.1 Write arguments focused on discipline-specific content.~~

~~WHST.9-10.1a Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.~~

~~WHST.9-10.1b Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.~~

~~WHST.9-10.1c Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.~~

~~WHST.9-10.1d Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.~~

~~WHST.9-10.1e Provide a concluding statement or section that follows from or supports the argument presented.~~

~~WHST.9-10.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.~~

~~WHST.9-10.2a Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.~~

~~WHST.9-10.2b Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.~~

Grades 9-10

Writing in History/SS, Science, and Technical Subjects

~~WHST.9-10.2c Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.~~

~~WHST.9-10.2d Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.~~

~~WHST.9-10.2e Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.~~

~~WHST.9-10.2f Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).~~

~~WHST.9-10.3 Not Applicable~~

Production and Distribution of Writing

~~WHST.9-10.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.~~

~~WHST.9-10.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.~~

~~WHST.9-10.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.~~

Research to Build and Present Knowledge

~~WHST.9-10.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.~~

~~WHST.9-10.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.~~

~~WHST.9-10.9 Draw evidence from informational texts to support analysis, reflection, and research.~~

Grades 9-10

Writing in History/SS, Science, and Technical Subjects

Range of Writing

~~WHST.9-10.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.~~

English III

Reading Literature Key Ideas and Details

RL.11.1 Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

RL.11.2 Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

RL.11.3 Analyze the impact of the author's choices regarding how to develop and relate elements of a story or drama (e.g., where a story is set, how the action is ordered, how the characters are introduced and developed).

Craft and Structure

RL.11.4 Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful. (Include Shakespeare as well as other authors.)

RL.11.5 Analyze how an author's choices concerning how to structure specific parts of a text (e.g., the choice of where to begin or end a story, the choice to provide a comedic or tragic resolution) contribute to its overall structure and meaning as well as its aesthetic impact.

RL.11.6 Analyze a case in which grasping a point of view requires distinguishing what is directly stated in a text from what is really meant (e.g., satire, sarcasm, irony, or understatement).

Integration of Knowledge and Ideas

RL.11.7 Analyze multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text. (Include at least one play by Shakespeare and one play by an American dramatist.)

RL.11.8 Not applicable to literature.

RL.11.9 Demonstrate knowledge of eighteenth-, nineteenth- and early twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics.

Range of Reading and Level of Text Complexity

RL.11.10 By the end of grade 11, read and comprehend literature, including stories, dramas, and poems, in the grades 11-CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.

English III

Reading Informational Text Key Ideas and Details

RI.11.3 Analyze a complex set of ideas or sequence of events and explain how specific individuals, ideas, or events interact and develop over the course of the text.

Craft and Structure

RI.11.4 Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings; analyze how an author uses and refines the meaning of a key term or terms over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

RI.11.5 Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.

RI.11.6 Determine an author's point of view or purpose in a text in which the rhetoric is particularly effective, analyzing how style and content contribute to the power, persuasiveness or beauty of the text.

Integration of Knowledge and Ideas

RI.11.7 Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.

RI.11.8 Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning (e.g., in U.S. Supreme Court majority opinions and

dissents) and the premises, purposes, and arguments in works of public advocacy (e.g., The Federalist, presidential addresses).

RI.11.9 Analyze seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance (including the Declaration of Independence, the Preamble to the Constitution, the Bill of Rights, and Lincoln's Second Inaugural Address) for their themes, purposes, and rhetorical features.

Range of Reading and Level of Text Complexity

RI.11.10 By the end of grade 11, read and comprehend literary nonfiction in the grades 11–CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.

English III

Writing

W.11.1 Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

W.11.1a Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences claim(s), counterclaims, reasons, and evidence.

W.11.1b Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases.

W.11.1c Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.

W.11.1d Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

W.11.1e Provide a concluding statement or section that follows from and supports the argument presented.

W.11.2 Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.

W.11.2a Introduce a topic; organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

English III

W.11.2b Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.

W.11.2c Use appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.

W.11.2d Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.

W.11.2e Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.

W.11.2f Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).

W.11.3 Write narratives to develop real or imagined experiences or events using effective technique, well-chosen details, and well-structured event sequences.

W.11.3a Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple point(s) of view, and introducing a narrator and/or characters; create a smooth progression of experiences or events.

W.11.3b Use narrative techniques, such as dialogue, pacing, description, reflection, and multiple plot lines, to develop experiences, events, and/or characters.

W.11.3c Use a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome (e.g., a sense of mystery, suspense, growth, or resolution).

W.11.3d Use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, setting, and/or characters.
W.11.3e Provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.

Production and Distribution of Writing

W.11.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade specific expectations for writing types are defined in standards 1–3 above.)

English III

W.11.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. (Editing for conventions should demonstrate command of Language standards 1–3 up to and including grades 11–12.)
W.11.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

Research to Build and Present Knowledge

W.11.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
W.11.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.
W.11.9 Draw evidence from literary or informational texts to support analysis, reflection, and research.
W.11.9a Apply grades 11–12 Reading standards to literature (e.g., “Demonstrate knowledge of eighteenth-, nineteenth- and early twentieth-century foundational works of American literature, including how two or more texts from the same period treat similar themes or topics”).
W.11.9b Apply grades 11–12 Reading standards to literary nonfiction (e.g., “Delineate and evaluate the reasoning in seminal U.S. texts, including the application of constitutional principles and use of legal reasoning [e.g., in U.S. Supreme Court Case majority opinions and dissents] and the premises, purposes, and arguments in works of public advocacy [e.g., The Federalist, presidential addresses]”).

Range of Writing

W.11.10 Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

English III

Speaking and Listening

Comprehension and Collaboration

SL.11.1 Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively.
SL.11.1a Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas.
SL.11.1b Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed.
SL.11.1c Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives.
SL.11.1d Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task.

SL.11.2 Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.

SL.11.3 Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used.

Presentation of Knowledge and Ideas

SL.11.4 Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks.

English III

SL.11.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.

SL.11.6 Adapt speech to a variety of contexts and tasks, demonstrating a command of formal English when indicated or appropriate. (See grades 11–12 Language standards 1 and 3 for specific expectations.)

English III

Language

Conventions of Standard English

L.11.1a Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested.

L.11.1b Resolve issues of complex or contested usage, consulting references (e.g., Merriam-Webster's Dictionary of English Usage, Garner's Modern American Usage) as needed.

L.11.2a Observe hyphenation conventions.

L.11.3a Vary syntax for effect, consulting references (e.g., Tufte's Artful Sentences) for guidance as needed; apply an understanding of syntax to the study of complex texts when reading.

Vocabulary Acquisition and Use

L.11.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 11–12 reading and content, choosing flexibly from a range of strategies.

L.11.4b Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable).

English IV

Range of Reading and Level of Text Complexity

RL.12.10 By the end of grade 12, read and comprehend literature, including stories, dramas, and poems, at the high end of the grades 11–CCR text complexity band independently and proficiently.

Grades 11–12: Literacy in History/SS

Reading in History/Social Studies Key Ideas and Details

RH.11–12.1 Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.

RH.11–12.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.

RH.11–12.3 Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain. Craft and Structure

RH.11–12.4 Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).

RH.11–12.5 Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole.

RH.11–12.6 Evaluate authors' differing points of view on the same historical event or issue by assessing the authors' claims, reasoning, and evidence. Integration of Knowledge and Ideas

- RH.11–12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.
- RH.11–12.8 Evaluate an author’s premises, claims, and evidence by corroborating or challenging them with other information.
- RH.11–12.9 Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources. Range of Reading and Level of Text Complexity
- RH.11–12.10 By the end of grade 12, read and comprehend history/social studies texts in the grades 11–CCR text complexity band independently and proficiently.

Grades 11–12: Literacy in Science and Technical Subjects

Reading in Science and Technical Subjects Key Ideas and Details

- RST.11–12.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
- RST.11–12.2 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
- RST.11–12.3 Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.

Craft and Structure

- RST.11–12.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics.
- RST.11–12.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
- RST.11–12.6 Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.
- RST.11–12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
- RST.11–12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
- RST.11–12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

Range of Reading and Level of Text Complexity

- RST.11–12.10 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

Grades 11–12: Writing I History/SS, Science and Technical Subjects

Writing

Text Types and Purposes

- WHST.11–12.1a Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.
- WHST.11–12.1b Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience’s knowledge level, concerns, values, and possible biases.
- WHST.11–12.1c Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.
- WHST.11–12.2a Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.

Grades 11–12: Writing I History/SS, Science and Technical Subjects

~~WHST.11–12.2d Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.~~

Production and Distribution of Writing

~~WHST.11–12.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.~~

~~WHST.11–12.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.~~



2024 Sports Medicine and Therapeutic Services

Program CIP: 51.0913 — Athletic Training/Trainer

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Research and Curriculum Unit
Mississippi State University
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.

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Acknowledgments

The sports medicine and therapeutic services curriculum was presented to the Mississippi State Board of Education on February 15, 2024. The following persons were serving on the state board at the time:

Dr. Ray Morgigno, interim state superintendent of education, executive secretary
Mr. Glen V. East, chair
Mr. Matt Miller, vice chair
Dr. Ronnie L. McGehee
Mr. Bill Jacobs
Mr. Mike Pruitt
Mrs. Mary Werner
Dr. Wendi Barrett
Mr. Charlie Frugé, student representative
Ms. Kate Riddle, student representative

The following Mississippi Department of Education (MDE) and RCU managers and specialists assisted in the development of the sports medicine and therapeutic services curriculum:

Wendy Clemons, the associate state superintendent of the MDE Office of Secondary, Professional Development, and Career Technical Education, supported the RCU and teachers throughout the development of the framework and supporting materials.
Brett Robinson, the state director of the MDE Office of Career and Technical Education (CTE), supported the RCU and teachers throughout the development of the framework and supporting materials.
Deanna Dunaway, the Health Science program supervisor of the MDE Office of CTE, supported the RCU and teachers throughout the development of the framework and supporting materials.
Betsey Smith, the director of the RCU, supported RCU staff and teachers throughout the development of this framework and supporting materials.
Courtney McCubbins, the curriculum manager of the RCU, supported RCU staff and teachers throughout the development of this framework and supporting materials.
Rob Fyke, a project manager with the RCU, researched and co-authored this framework.
Katherine Hancock, a project manager with the RCU, researched and co-authored this framework.

Special thanks are extended to the educators who contributed to the development and revision of this framework and supporting materials:

Bill Johnson, Choctaw County Career and Technology Center, Ackerman
Tiffany Cavanaugh, Hinds County Career and Technical Center, Raymond
Michael Lewis, Millsaps Career and Technology Center Starkville

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

Ken Lee, Athletic Trainer, Columbus Orthopedics

David Ruffin, Athletic Trainer, OCH Regional Medical Center

Jamie Rodgers, Hospital Administrator, North Mississippi Medical Center

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 sports medicine and therapeutic services is aligned to the following 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/oea/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

Sports medicine and therapeutic services is one of the second-course options for students in the health sciences career cluster who have successfully completed the health science core class. The sports medicine career pathway focuses on the aspects of the prevention and care of sports injuries. Students will learn the importance of prevention, evaluation, acute treatment, and therapeutic care related to injuries in sports. Students will also learn about the types of injuries that can occur and be introduced to the emergency services associated with athletics.

Additionally, students will focus on rehabilitation techniques used to help patients recover from sports injuries. The program offers students the opportunity to examine the different careers associated with sports medicine and develop the workplace and employability skills associated with sports medicine professions.

The health science pathway requires a minimum of 100 hours of clinical-type experience to be obtained by the program's completion. It is recommended to spread these hours out among the length of the program by beginning to give students multiple opportunities to complete some hours in the health science core class. The remaining number of hours not obtained by students in the health science core class should be obtained by the completion of the sports medicine class. This clinical-type experience can include tours of health care facilities, guest speakers, participation in health fairs or health-related community service, laboratory/skills practice, demonstration in the classroom, and observation or job shadowing experiences in various health care settings. Videos do not count toward this 100-hour requirement unless they are used in conjunction with a hands-on training or class (i.e., CPR).

College, Career, and Certifications

College- and career-ready 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-Ready Standards (MS CCRS)* to provide a consistent, clear understanding of what students are expected to learn so teachers and parents know what they need to do to help them.

mdek12.org/OAE/college-and-career-readiness-standards

Grade Level and Class Size Recommendation

It is recommended that students enter this program as sophomores, juniors, or seniors.

Exceptions to this are a district-level decision based on class size, enrollment numbers, student maturity, and CTE delivery method. This is a hands-on, lab- or shop-based course. Therefore, a maximum of 15 students is recommended per class with only one class with the teacher at a time.

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. 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 1 — Two 1–Carnegie Unit Courses

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

1. **Sports Medicine: Theory and Application I — Course Code: 995202**
2. **Sports Medicine: Theory and Application II — Course Code: 995203**

Course Description — Sports Medicine: Theory and Application I

Sports Medicine: Theory and Application I provides a solid foundation for careers in the sports medicine field. After a brief review of safety and communication, this course breaks down the various members of the sports medicine team and their respective roles. This is followed by a unit on health care administration, which covers how medical care is administered, recorded, processed, and stored; and how to perform mass athletic physical examinations. Students will end with learning about taping and bracing in sports, followed by a significant amount of time on first aid, CPR, and other emergency care services in sports.

Course Description — Sports Medicine: Theory and Application II

Sports Medicine: Theory and Application II introduces students to the various injuries to the head, spine, chest, abdomen, and upper and lower extremities that commonly occur in sports. In each injury unit, the students will cover all basic anatomy for that region of the body, common injuries to that area and mechanisms of each, and common medical field tests for those injuries. Then, students will conduct an evaluation and develop a treatment plan for a particular injury. After spending a significant amount of time on this, the course concludes with introductory lessons on training and conditioning techniques, nutrition in sports, and pharmacology, followed by the final unit on employment opportunities in health care.

Sports Medicine: Theory and Application I — Course Code: 995202

Unit	Unit Title	Hours
1	Orientation, Safety, and Communication	10
2	Employment Preparation and Embedded Word-Based Learning	10
3	Therapeutic Services	15
4	The Sports Medicine Team	15
5	Health Care Administration	15
6	Protective Equipment and Techniques	30
7	First Aid in Sports	15
8	Emergency Care in Sports	30
Total		140

Sports Medicine: Theory and Application II — Course Code: 995203

Unit	Unit Title	Hours
9	Fundamental Concepts of Evaluation	20
10	Modalities	20

11	Injuries to the Head and Spine	10
12	Injuries to the Chest and Abdomen	10
13	Injuries to the Upper Extremities	18
14	Injuries to the Lower Extremities	18
15	Basics of Training and Conditioning Techniques	8
16	Nutrition in Sports	8
17	Pharmacology and Drugs in Sports	8
18A	Clinical Capstone Project: Sports Medicine Option	20
18B	Clinical Capstone Project: Therapeutic Services Option	20
Total		140

Option 2—One 2-Carnegie Unit Course

This curriculum consists of one 2-credit course:

1. Sports Medicine and Therapeutic Services—Course Code: 995200

Course Description: Sports Medicine and Therapeutic Services

The Sports Medicine course provides a solid foundation for careers in the sports medicine field. After a brief review of safety and communication, this course breaks down the various members of the sports medicine team and their respective roles. This is followed by a unit on health care administration, which covers how medical care is administered, recorded, processed, and stored; and how to perform mass athletic physical examinations. Students will then learn about taping and bracing in sports followed by a significant amount of time on first aid, CPR, and other emergency care services in sports. This course continues with the fundamental concepts of evaluation and therapeutic rehabilitation and modalities before introducing students to various injuries to the head, spine, chest, abdomen, and upper and lower extremities that commonly occur in sports. In each injury unit, the students will cover all basic anatomy for that region of the body, common injuries to that area and mechanisms of each, and common medical field tests for those injuries. Students will then conduct an evaluation and develop a treatment plan for a particular injury. After spending a significant amount of time on this, the course concludes with introductory lessons on training and conditioning techniques, nutrition in sports, and pharmacology, and a final unit on employment opportunities in health care. In this last unit, students will conduct interviews and research and prepare applications, resumés, and cover letters for actual jobs to prepare themselves for employment in any health care field.

Sports Medicine and Therapeutic Services—Course Code: 995200

Unit	Unit Title	Hours
1	Orientation, Safety, and Communication	10
2	Employment Preparation and Embedded Word-Based Learning	10
3	Therapeutic Services	15
4	The Sports Medicine Team	15
5	Health Care Administration	15
6	Protective Equipment and Techniques	30
7	First Aid in Sports	15
8	Emergency Care in Sports	30
9	Fundamental Concepts of Evaluation	20
10	Modalities	20
11	Injuries to the Head and Spine	10
12	Injuries to the Chest and Abdomen	10
13	Injuries to the Upper Extremities	18
14	Injuries to the Lower Extremities	18
15	Basics of Training and Conditioning Techniques	8
16	Nutrition in Sports	8
17	Pharmacology and Drugs in Sports	8
18A	Clinical Capstone Project: Sports Medicine Option	20

18B	Clinical Capstone Project: Therapeutic Services Option	20
Total		280

Career Pathway Outlook

Overview

The sports medicine and service pathway introduce students to basic medical concepts in athletics and fitness. Although this curriculum is written from the perspective of an athletic trainer, it will prepare students for any career related to the field of sports medicine. This program will target careers at both the professional and technical levels within health care. Students enrolled in this high school level sports medicine program should be well prepared to pursue degrees at the community college and four-year-college level. Sports medicine providers, in general, understand what athletes go through physically speaking within their game and during their training sessions. In addition to preventing and treating acute injuries, such as a torn ligament or broken bone, these professionals understand how to handle chronic, repetitive-motion conditions. Treatment is tailored to each patient's needs. A sports medicine expert works to educate each patient about things they can do before, during, and after sports events to prevent injuries or manage pain. These professionals may work in hospitals, medical clinics, rehabilitation centers, private practices, public school systems, colleges and universities, and professional sports organizations. Within a hospital or medical clinic facility, a wide variety of services may take place such as aquatic (pool) therapy and therapy for patients receiving psychiatric care.

Most careers related to sports medicine require at least an associate degree, although careers with the highest earning potential—physiologist, athletic trainer, orthopedic nurse, kinesiotherapist, physical therapist, sports psychologist, sports medicine nurse, physiatrist, primary care sports medicine physician, and orthopedic surgeon, postsecondary and medical schoolteachers, for example—require advanced degrees and medical specialist certifications. According to the American Osteopathic Academy of Sports Medicine (AOASM), there are two types of sports medicine-related doctors, non-surgical (primary care sports medicine) and orthopedic surgeons. Most primary care sports medicine doctors choose family medicine as their baseline training, which means they first complete three years of a family medicine residency after medical school, before embarking on their additional sports medicine training. Although family medicine residency is the most popular choice, other choices for initial residency training include pediatrics, internal medicine, emergency medicine, neuromusculoskeletal, and rehabilitation medicine. Each of those options are non-surgical specialties. Orthopedic surgeons must complete an orthopedic surgery residency.

Needs of the Future Workforce

According to the U.S. Bureau of Labor Statistics, healthcare support occupations are projected to grow the fastest of all occupational groups, at 17.8% through 2031. Employment of athletic trainers is projected to grow 17% through 2031, much faster than the average for all occupations. Health care is one of the top five fastest growing industries and is generally one of the largest industries in the United States. Rapid growth in employment is expected for workers within health care-related occupations concentrated outside the inpatient hospital sector, such as physical and occupational therapists and personal and home health workers. Most significantly, in relation to sports medicine, nurse practitioners are at the top of the list as the fastest growing career overall with 45.7% employment growth projected through 2031. To put this into perspective, Mississippi's average employment growth total through 2031 is projected to

increase by 5.3% for all general occupations combined. Three sports medicine-related career fields are among the top 25 careers with the fastest growing employment nationwide: medical and health services managers (15th), occupational therapy assistants (23rd), and physical therapist assistants (20th). The healthcare and social assistance sector is projected to add about 2.6 million jobs within the decade, the most of any sector. In fact, the individual and family services industries are projected to add the most employment, approximately 850,000 jobs, and is expected to have the fastest annual employment growth of all healthcare and social assistance industries at 2.8 percent. 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, 2022
Athletic Trainers	260	310	50	19.2%	\$24.07
Clinical Laboratory Technologists and Technicians	3,360	3,720	360	10.7%	\$21.84
Clinical Nurse Practitioner	3,710	4,790	1,080	29.1%	\$53.73
Coaches and Scouts	1,750	2,050	300	17.1%	\$25.20
Diagnostic Medical Sonographers	680	800	120	17.6%	\$30.72
Dietetic Technicians	160	190	30	18.8%	\$9.96
Dietitians and Nutritionists	730	850	120	16.4%	\$21.15
Dietitians and Nutritionists	730	850	120	16.4%	\$21.15
Emergency Medical Technicians and Paramedics	2,580	3,050	470	18.2%	\$20.09
Exercise Physiologists	2,360	2,600	240	10.2%	\$23.07
Family Medicine Physicians	940	1,100	160	17%	\$100.58
Fitness Trainers, Aerobics Instructors, Exercise Trainers, and Group Fitness Instructors	1,400	1,620	220	15.7%	\$17.17
Insurance Sales Agent	3,270	3,380	110	3.4%	\$27.34
Licensed Practical and Licensed Vocational Nurses	9,520	11,040	1,520	16%	\$19.97
Medical Assistants	3,660	4,480	820	22.4%	\$15.21
Medical Dosimetrists, Medical Records Specialists, and Health	3,440	3,860	420	12.2%	\$17.16

Technologists and Technicians					
Nursing Assistants	12,840	15,350	2,510	19.5%	\$12.35
Nursing Instructors and Teachers, Postsecondary	600	750	150	25%	\$36.01
Occupational Therapists	850	1,030	180	21.2%	\$42.03
Occupational Therapy Assistants	290	400	110	37.9%	\$28.93
Orthotists and Prosthetists	60	60	0	0%	\$52.54
Pharmacists	2,590	2,750	160	6.2%	\$57.33
Pharmacy Technicians	3,600	4,200	600	16.7%	\$16.57
Physical Therapist Assistants	850	1,090	240	28.2%	\$26.35
Physical Therapists	1,580	1,940	360	22.8%	\$46.15
Physician Assistants	290	380	90	31%	\$35.64
Podiatrist	40	40	0	0%	\$81.32
Radiologic Technicians and Technologists	2,300	2,500	200	8.7%	\$23.98
Recreational Therapists	210	220	10	4.8%	\$17.49
Recreational Therapists	210	220	10	4.8%	\$17.49
Registered Nurses	29,270	33,220	3,950	13.5%	\$30.35
Rehabilitation Services Manager, Rehabilitation Counselors	570	620	50	8.8%	\$17.49
Respiratory Therapist	1,460	1,780	320	21.9%	\$25.03
Respiratory Therapists	1,460	1,780	320	21.9%	\$25.03
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	1,960	2,300	340	17.3%	\$20.59
Surgeon	200	240	40	20%	\$158.57
Surgical Technologist	1,120	1,200	80	7.1%	\$19.35
Veterinarians	640	760	120	18.8%	\$49.01
Veterinary Assistants and Laboratory Animal Caretakers	770	910	140	18.2%	\$12.09

Sources: Mississippi Department of Employment Security; mdes.ms.gov ([OP](#), [OEWS](#)) (2022) and Bureau of Labor Statistics ([OEWS](#)) (May 2021).

Perkins V Requirements and Academic Infusion

The sports medicine and therapeutic services curriculum meets Perkins V requirements of introducing students to and preparing them for high-skill, high-wage occupations in health care fields. It also offers students a program of study, including secondary, postsecondary, and institutions of higher learning courses, that will further prepare them for health care careers. Additionally, this curriculum is integrated with academic college- and career-readiness

standards. Lastly, 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 sports medicine and therapeutic services educator's goal should be to include teaching strategies that incorporate 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. There are several here in Mississippi that will foster the types of learning expected from the sports medicine and therapeutic services curriculum. HOSA is an example of a student organization with many outlets for health. Student organizations provide participants and members with growth opportunities and competitive events. They also open the doors to the world of sports medicine and therapeutic service 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 sports medicine and therapeutic services 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 sports medicine and therapeutic services curriculum provides opportunities for students to work together and help each other complete complex tasks. There are many field experiences within the sports medicine and therapeutic services 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 sports medicine and therapeutic services classroom. The sports medicine and therapeutic services 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 WBL, visit the Mississippi Work-Based Learning Manual on the RCU website, rcu.msstate.edu.

Professional Organizations

Association of Career and Technical Education
acteonline.org

International Society for Technology in Education
iste.org

National Organizations

American Association for Respiratory Care
aarc.org

American Board of Sport Psychology
americanboardofsportpsychology.org

American College of Sports Medicine
acsm.org

American Health Care Association
ahca.org

American Health Information Management Association
ahima.org

American Hospital Association
aha.org

American Medical Association
ama-assn.org

American Occupational Therapy Association
aota.org

Association of Allied Health Programs
asahp.org

American Physical Therapy Association
apta.org

American Red Cross-National Headquarters
redcross.org

American School Health Association
ashaweb.org

American Society of Radiologic Technologists

asrt.org

Arthroscopy Association of North America

aana.org

Association for Applied Sport Psychology

appliedsportpsych.org

Association for Healthcare Documentation Integrity

ahdionline.org

Association for Professionals in Infection Control and Epidemiology

apic.org

Center for Health and Health Care in Schools

healthinschools.org

Collegiate and Professional Sports Dieticians Association

sportsrd.org

College Athletic Trainers' Society

collegeathletictrainer.org

Health Professions Network

healthpronet.org

Hospital Corporation of America

hcahealthcare.com

National Association of Emergency Medical Technicians

naemt.org

National Association of Intercollegiate Athletics

naia.org

National Athletic Trainer's Association

nata.org

National Collegiate Athletic Association

ncaa.org

National Health Council

nationalhealthcouncil.org

National Operating Committee on Standards for Athletic Equipment

nocsae.org

North American Society for Pediatric Exercise Medicine
naspem.org

Society of Nuclear Medicine and Molecular Imaging
snmmi.org

State Organizations

American Heart Association (MS Offices)
heart.org

American Lung Association
lung.org

The Diabetes Foundation of Mississippi
msdiabetes.org

Mississippi Office of Healthy Schools—A Division of the Mississippi Department of Education
healthisacademic.org

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 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 sports medicine and therapeutic services 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: Orientation, Safety, and Communication

Competencies and Suggested Objectives
<p>1. Describe the purpose of the course. ^{DOK1}</p> <ol style="list-style-type: none">Identify student and course expectations.Review the health science student organization (HOSA).<ul style="list-style-type: none">DeadlinesNominate officersFundraisingNational service projectCompetitive eventsDiscuss leadership and personal development in accordance with HOSA guidelines.Expose students to community health care industries.<ul style="list-style-type: none">Make a connection with community industry professionals.Request industry participation with evaluating skills.
<p>2. Establish the expectations, policies, and procedures of the sports medicine program. ^{DOK1}</p> <ol style="list-style-type: none">Describe the program's policies and procedures.<ul style="list-style-type: none">Dress codeAttendanceAcademic requirementsDisciplineRules and regulations of the various sports medicine environmentsTransportation regulationsClassroom and labGive a brief overview of the course.<ul style="list-style-type: none">Course objectivesDelivery methods (e.g., teaching style, materials, field experiences, etc.)Compare and contrast the policies of the local program/school to expectations of employers in the sports medicine industry.
<p>3. Review and implement the proper safety procedures and protocols in the various sports medicine environments. ^{DOK2}</p> <ol style="list-style-type: none">Investigate and implement safety procedures and protocols.<ul style="list-style-type: none">Principles of body mechanics and ergonomicsTechniques to prevent accidents and injuriesFire safety protocolsEmergency response protocols for natural disastersPrecautions needed to prevent the spread of communicable diseasesPersonal protective equipment (PPE)Standard precautions based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.OSHA's blood-borne pathogen standards
<p>4. Review and implement proper communication and etiquette in the various sports medicine environments. ^{DOK2}</p>

- a. Investigate and implement effective communication and etiquette responsibilities in healthcare environments.
 - Chain of command
 - Characteristics of professionalism
 - Situational awareness
 - Confidentiality
 - Health Insurance Portability and Accountability Act of 1996 (HIPAA)
 - Family Educational Rights and Privacy Act (FERPA)

Enrichment

1. Research, identify, and complete local facility requirements. ^{DOK1}
 - a. Proper OSHA and HIPAA training standards
 - b. Student/volunteer health requirements (e.g., immunizations, tuberculosis test, etc.)
 - c. Proper worksite behavior
 - d. Proper identification and documentation
 - e. Safety standards

Unit 2: Employment Preparation and Embedded Work-Based Learning

Competencies and Suggested Objectives

1. Research current available jobs across the health care field. ^{DOK1}
 - a. Develop a chart comparing the following elements:
 - Certifications
 - Job description/responsibilities
 - Minimum education
 - Minimum experience
 - Salary
 - b. Identify various employment settings for sports medicine and healthcare personnel.
 - Clinics
 - Colleges and universities
 - Hospitals
 - Industrial setting
 - Professional sports
 - Recreational sports
 - Secondary schools
2. Define desirable traits and attitudes of team members in an employment setting. ^{DOK1}
 - a. Discuss and demonstrate the following traits of effective team members:
 - Acceptance of criticism
 - Accuracy and attention to detail
 - Adaptability
 - Compassion
 - Competence
 - Dependability
 - Discretion
 - Empathy
 - Enthusiasm
 - Honesty
 - Initiative
 - Integrity
 - Patience
 - Positive Attitude
 - Punctuality
 - Responsibility
 - Self-motivation
 - Sense of humor
 - Social and cultural competence
 - Stamina
 - Tact

<ul style="list-style-type: none"> • Willingness to learn
3. Through a real job search, analyze differences in the online application requirements of various job postings. ^{DOK1}
4. Research and discuss real job advertisements. ^{DOK2} <ol style="list-style-type: none"> Select a real job advertisement and complete the tasks below. <ul style="list-style-type: none"> • Develop a cover letter to fit the job advertisement using terminology that reflects the culture and values specific to that company or clinic. • Create a résumé with fabricated elements to fit the real job advertisement. <p><i>Note: this résumé is not to be used for a real job application, but for learning purposes only. Delete any fabricated elements before using it for a real job application.</i></p>
5. Demonstrate real-world interview skills led by the instructor and/or advisory committee members. ^{DOK3} <ol style="list-style-type: none"> Discuss and apply the following interview skills: <ul style="list-style-type: none"> • Industry/job advertisement • Professional attire • Cover letter • Application and/or résumé • Thank you letter
6. Develop components of a work-based learning personal portfolio. Refer to the updated and state approved work-based learning requirements. ^{DOK4} <ol style="list-style-type: none"> Creation of a student personal profile in the state approved digital platform. <ul style="list-style-type: none"> • Accomplishments/Certifications • Career Objectives • References Development and tracking of the student project learning experiences. <ul style="list-style-type: none"> • Plan • Journal (reference the state requirements) • Picture • Reflection • Evaluation (reference the state requirements)

Enrichment
1. Conduct virtual interviews in addition to real-world interviews (e.g., via Skype, Facetime, FlipGrid, etc.).
2. Evaluate various career ladders for advancement in the health care field.

Unit 3: Therapeutic Services

Competencies and Suggested Objectives

1. Define therapeutic services and discuss the different careers within the field. ^{DOK1}
 - a. Explore job responsibilities and work environments for various careers. The discussion may include educational requirements, appropriate schools, licensure/certification/registration, work environment, job responsibilities, and salary.
 - Certified Athletic Trainer
 - Occupational therapist
 - Occupational therapist assistant
 - Physical therapist
 - Physical therapist assistant
 - Respiratory therapist
 - Speech Pathologists
 - Sports Psychiatrist
 - Sports Psychologists
 - Other therapeutic services
 - b. Discuss the importance of therapeutic services in sports medicine, athletics, and overall healthcare.
2. Investigate a therapeutic service career and present the findings on the career. ^{DOK2}
 - a. Choose a therapeutic service career to investigate.
 - b. Report the discoveries of the career within a teacher approved option such as a written report, PowerPoint, slide show, poster, or other teacher-approved presentation method.
 - Describe the educational expectations needed for an individual to practice within the chosen therapeutic career.
 - Report the job responsibilities within the career.
 - Highlight the current demand for employment within the therapeutic service.
 - Express the salary range within the therapeutic service field.
 - Include data when applicable.

Unit 4: The Sports Medicine Team

Competencies and Suggested Objectives	
1. Differentiate between the various organizations contributing to sports medicine. ^{DOK1}	
a. Compare and contrast at least four professional organizations regarding the following:	
<ul style="list-style-type: none">• Continuing education opportunities• Professional advocacy• Publications• Practicing regulations• General organizational structure (i.e., regional, state, national, and international).	
<i>Note: see the “Professional Organizations” section for a brief list of possible organizations to research</i>	
b. Research and discuss the purpose of the local and national governing bodies that establish and regulate safety standards in sports.	
<ul style="list-style-type: none">• Development of rules and regulations• Physical protection and care of the athlete• Legal protection of coaches and health care providers	
2. Differentiate the roles of the sports medicine team. ^{DOK1}	
a. Identify the members of the sports medicine team and their respective roles.	
<ul style="list-style-type: none">• Athletic trainer• Dietician• EMT and paramedic• Nutritionist• Occupational Therapist• Pharmacist• Physical Therapist• Specialty physicians• Sport coach• Sport psychologist• Strength and conditioning coach• Team physician	
b. Discuss how the members of the sports medicine team fall under the categories of injury/illness care and/or sports performance.	
c. Identify the five performance domains and tasks of the sports medicine team.	
<ul style="list-style-type: none">• Prevention of athletic injuries• Recognition, evaluation, and immediate care of injuries• Rehabilitation and reconditioning of athletic injuries• Health care administration• Professional development and responsibility	
3. Analyze unique legal and ethical issues in sports medicine. ^{DOK3}	
a. Research and discuss current legal and ethical issues related to sports medicine.	
b. Based on research, facilitate a debate regarding the issues discussed in objective 3.a.	

Enrichment

1. Research and discuss the origination of sport (e.g., Greek and Roman civilizations, the Olympics) and the evolution of the sports medicine field.
2. Compare HOSA to the professional organizations analyzed in competency 1.
3. Develop a career exploration project on one or many of the members of the sports medicine team to use in HOSA competition.

Unit 5: Health Care Administration

Competencies and Suggested Objectives

1. Identify the administrative responsibilities of a health care professional. ^{DOK3}
 - a. Design an administrative plan that includes facility design for multi-services provided, budget maintenance, supply, and equipment inventory (including basic first aid supplies), and file storage and protection.
 - b. Complete a new patient medical profile that includes, but is not limited to, demographics, medical history (i.e., personal and family), HIPAA forms, and current medical condition (e.g., medications, pain, symptoms, etc.).
 - c. Collect, manage, and file insurance information.
 - d. Differentiate between the various insurance claims regarding accidental, sports related, and catastrophic injuries.

Unit 6: Protective Equipment and Techniques

Competencies and Suggested Objectives
<p>1. Identify the governing bodies that set standards for safety and for protective equipment in sports. ^{DOK1}</p> <p>a. Research, and discuss the equipment safety standards set for the identified governing bodies.</p> <ul style="list-style-type: none">• National Operating Committee on Standards for Athletic Equipment (NOCSAE)• National Federation of State High School Associations (NFHS)• National Collegiate Athletic Association (NCAA)
<p>2. Identify and discuss the importance of proper application for the types of protective equipment mandated in sports for the head, chest, and lower extremities. ^{DOK1}</p> <p>a. Analyze equipment utilized in the following sports:</p> <ul style="list-style-type: none">• Baseball/Softball• Basketball• Boxing• Football• Hockey• Lacrosse• Soccer• Volleyball• Wrestling• Other
<p>3. Discuss the importance of quality protective equipment for joints in sports. ^{DOK3}</p> <p>a. Identify the various types of protective equipment (e.g., compression sleeves, hinge braces, etc.) for both upper and lower extremities.</p> <p>b. Compare and contrast the advantages and disadvantages of customized versus off-the-shelf devices.</p> <p>c. Administer proper technique for brace application. (e.g., knee brace, ankle brace, etc.)</p>
<p>4. Demonstrate the basic skills needed for taping in sports. ^{DOK2}</p> <p>a. Identify the indications and contraindications of taping in sports.</p> <p>b. Differentiate between different types of adhesive and cohesive tape, and determine which application is best for a specific scenario.</p> <p>c. Identify and demonstrate the basic tape applications for upper extremities.</p> <ul style="list-style-type: none">• Buddy taping• Hyperextension restriction (elbow, wrist)• Thumb Spica• Wrist <p>d. Identify and demonstrate the basic tape applications for lower extremities.</p> <ul style="list-style-type: none">• Achilles• Ankle• Arch• Turf Toe

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| 5. Describe the steps and techniques for casting. ^{DOK1} <ol style="list-style-type: none">Identify and describe casting materials.<ul style="list-style-type: none">Hard castingSoft castingResearch and discuss the indications and contraindications for immobilization.Research and discuss the advantages and disadvantages of casting. |
| 6. Research the impact of emerging technology on protective equipment and techniques. |

Enrichment

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| <ol style="list-style-type: none">Make a customized foam with a thermo-moldable shell.Identify the reasons for wrapping with elastic bandages in sports.Apply the proper procedure for casting an upper and lower extremity.Demonstrate the proper technique for fitting a helmet. |
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Unit 7: First Aid in Sports

Competencies and Suggested Objectives	
1. Discuss the necessary skills to provide first aid treatment. ^{DOK1}	
a. Describe the basic principles of first aid.	<ul style="list-style-type: none">• Recognize an emergency exists.• Scene safety• Patient assessment (responsiveness, injuries present)• Activate EMS• Triage (if multiple victims are present)
2. Explore concepts for recording vital signs. ^{DOK3}	
a. Identify normal ranges for each and discuss implications of each.	
b. Demonstrate proper procedures for measuring and recording vital signs according to HOSA standards.	<ul style="list-style-type: none">• Measure and record oral, rectal, axillary, and tympanic temperatures accurately.• Measure and record apical and radial pulse to an accuracy of +/- 2 beats per minute.• Measure and record respirations to an accuracy of +/- 2 of instructor's count.• Measure and record blood pressure to an accuracy of +/- millimeters of actual reading.
3. Describe the concepts for treating bleeding and the application of dressings and bandages. ^{DOK2}	
a. Identify the types of wounds.	<ul style="list-style-type: none">• Abrasions• Avulsions• Blisters• Lacerations• Punctures• Stings/Bites
b. Apply the proper procedure for treating a major and minor wound.	
4. Describe the concepts for treating shock. ^{DOK2}	
a. Differentiate between types of shock.	<ul style="list-style-type: none">• Anaphylactic• Hemorrhagic
b. Identify the general signs and symptoms of shock.	<ul style="list-style-type: none">• Cyanosis• Diaphoresis• Low blood pressure• Rapid pulse and respiration
c. Apply the proper procedure for treating shock in various situations.	
5. Describe the concepts for treating musculoskeletal injuries. ^{DOK2}	
a. Identify types of basic musculoskeletal injuries.	<ul style="list-style-type: none">• Dislocations

<ul style="list-style-type: none"> • Fracture • Sprains • Strains • Subluxation <p>b. Describe types of immobilization devices and their proper use.</p> <ul style="list-style-type: none"> • Anatomical splint • Rigid splint • Sling (cravat) • Soft splint <p>c. Properly treat a musculoskeletal injury utilizing the PRICE protocol (protection, rest, ice, compression, elevation).</p>
<p>6. Describe the concepts for treating sudden illnesses. ^{DOK2}</p> <p>a. Differentiate between the following emergency conditions: stroke, seizure, fainting, and diabetic reaction (hyperglycemia, hypoglycemia).</p> <p>b. Apply the proper procedures to treat the above sudden illnesses.</p>
<p>7. Describe the concepts for treating specific injuries. ^{DOK2}</p> <p>a. Identify the common injuries to body parts.</p> <ul style="list-style-type: none"> • Abdomen • Chest • Ears • Eyes • Genital organs • Head/skull • Nose • Skin <p>b. Apply the proper treatment for specific injuries to the above body parts.</p>
<p>8. Research and discuss the impact of emerging technology for first aid in sports. ^{DOK2}</p>

Enrichment

1. Complete the certification process for Heartsaver First Aid.
2. Utilize HOSA competitive event guidelines for CERT, first aid, and EMT.
3. Complete the MyPI training (used with multiple units).
4. Use proper medical terminology throughout this unit.

Unit 8: Emergency Care in Sports

Competencies and Suggested Objectives
<p>1. Describe the components of an emergency action plan (EAP). ^{DOK2}</p> <p>a. Develop an EAP for a specific sports medicine setting.</p> <ul style="list-style-type: none">• Personnel responsibilities (chain of command)• Emergency communication methods• Emergency equipment (e.g., AED, spinal board, splints, trauma kit, etc.)• Venue mapping (entrance/exit protocols)• Extreme weather policies (see Mississippi High School Activity Association policies)
<p>2. Perform skills obtained in training or certification for Basic Life Support for Health Care Providers according to the latest information from the American Heart Association or American Red Cross. ^{DOK2}</p> <p>a. Demonstrate the procedure for administering cardiopulmonary resuscitation (CPR) to infants, children, and adults.</p> <p>b. Demonstrate the procedure for administering CPR using an automated external defibrillator (AED) for infants, children, and adults.</p> <p>c. Demonstrate the procedure for removing a foreign body airway obstruction in infants, children, and adults.</p>
<p>3. Describe the prevention, recognition, and treatment of various heat illnesses. ^{DOK2}</p> <p>a. Construct a prevention plan for heat illness.</p> <ul style="list-style-type: none">• Hydration• Analyze and monitor urine color• Wet bulb globe temperature monitoring• Pre-/post-exercise body weight tracking• Acclimatization procedures <p>b. Differentiate between heat cramps, heat exhaustion, and heat stroke.</p> <p>c. Research and discuss the proper treatment methods for heat exhaustion and heat stroke, including, but not limited to, actions determined by core temperature reading, cold water emersion, and fluid replacement (oral, intravenous).</p>
<p>4. Transport an injured victim safely and efficiently. ^{DOK2}</p> <p>a. Demonstrate proper transportation techniques.</p> <ul style="list-style-type: none">• Two-person crutch• Two-handed seat• Four-handed seat• Fireman’s carry <p>b. Demonstrate the proper spine boarding techniques as a team.</p> <ul style="list-style-type: none">• Stabilize the head, neck, and spine in the discovered position• Acquire proper spine-boarding equipment• Log-roll technique onto the spine board• Stabilize the victim on the board• Lift the victim

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| <p>5. In a role play situation, demonstrate the steps involved in an on-the-field injury assessment according to the American Hospital Association (AHA). ^{DOK3}</p> <p>a. Perform a primary survey, including the elements below.</p> <ul style="list-style-type: none">• Airway• Breathing• Circulation• Defibrillation• Environment/exposure• Responsiveness <p>b. Apply the proper first aid procedure for the given scenario.</p> |
| <p>6. Research and discuss the impact of emerging technology for emergency care in sports. ^{DOK2}</p> |

Enrichment

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| <ol style="list-style-type: none">1. Debate if pads/equipment should be removed in a spinal injury case.2. Discuss the effects of altitude on the human body during physical activity.3. Complete the MyPI training (used with multiple units). |
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Unit 9: Fundamental Concepts of Evaluation

Competencies and Suggested Objectives
1. Differentiate between HOPS (history, observation, palpitation, special test) and SOAP (subjective, objective, assessment, plan). ^{DOK2} <ol style="list-style-type: none">Define and perform the proper steps for a HOPS evaluation.Define each component of a SOAP note and demonstrate using this method.
2. Plan and conduct a pre-participation physical examination. ^{DOK2} <ol style="list-style-type: none">Obtain a medical history.Give a primary physical examination including height, weight, vital signs, vision screening using a Snellen eye chart, hearing screening, ROM and strength screening.
3. Demonstrate proper procedures for measuring and recording vital signs according to HOSA standards. ^{DOK2} <ol style="list-style-type: none">Measure and record oral, rectal, axillary, and tympanic temperatures accurately.Measure and record apical and radial pulse to an accuracy of +/- 2 beats per minute.Measure and record respirations to an accuracy of +/- 2 of instructor's count.Measure and record blood pressure to an accuracy of +/- 2 millimeters of actual reading.
4. Determine the mechanism of injuries (MOI). ^{DOK1} <ol style="list-style-type: none">Differentiate between and provide athletic and non-athletic examples of the major biomechanical forces affecting connective tissue.<ul style="list-style-type: none">BendingCompressionShearTensionTorsionDifferentiate between the various acute injuries that can occur in sports and their causes (biomechanical forces above).<ul style="list-style-type: none">AbrasionsBlistersContusionsDislocationFracturesLacerationsNerve damageSprainsStrainsSubluxationDescribe the various chronic injuries that can occur.<ul style="list-style-type: none">BursitisOsteoarthritisTendonitis
5. Explain the evaluation of injuries by diagnostic testing. ^{DOK1}

- a. Identify and describe the following clinical assessments: joint stress test; manual muscle test; bone percussion, and compression tests; and girth measurement (for swelling).
- b. Differentiate diagnostic imaging procedures.
 - CT scan
 - MRI
 - Ultra-sound
 - X-ray

Enrichment

1. Complete a medical profile throughout the course.
2. Discuss disqualifications from sports due to physical issues found in the pre-participation physical exam.

Unit 10: Modalities

Competencies and Suggested Objectives	
1. Identify the presentation and duration of the three phases of musculoskeletal healing in acute and chronic injuries. ^{DOK2}	<ol style="list-style-type: none"> a. Explore and discuss the presentation and duration of the three phases of musculoskeletal healing in acute and chronic injuries. <ul style="list-style-type: none"> • Inflammatory phase • Repair phase • Remodeling phase
2. Investigate the various types of therapeutic modalities. ^{DOK2}	<ol style="list-style-type: none"> a. Research and discuss the safety concerns, equipment types/sources, physical principals, indications, and contraindications of types of therapies. <ul style="list-style-type: none"> • Electrotherapy (quad-polar, bipolar, Russian stim) • Massage • Thermal/Cryo • Ultrasound b. Given a scenario of a specific injury, identify which modality to use and explain why.
3. Demonstrate the proper procedures used in sports medicine and physical therapy related to ambulation, transfers, and assistive devices according to HOSA standards. ^{DOK2}	<ol style="list-style-type: none"> a. Apply procedure for fitting and ambulating a patient with a walker and cane. b. Apply the proper procedure for fitting a patient with crutches and giving instruction for a three-point gait. c. Apply the proper procedure for ambulating a patient with a gait belt. d. Apply the proper procedure for transferring a patient from supine to sitting position. e. Apply the proper procedure for transferring a patient from the bed to a chair/wheelchair.
4. Identify and discuss the primary components of a rehabilitation program. ^{DOK1}	<ol style="list-style-type: none"> a. Range of motion (ROM) b. Neuromuscular re-education (core stabilization) c. Muscular strength, endurance, and power d. Restoring sport-specific function (or activities of daily living [ADL])
5. Research and discuss the various components of range of motion (ROM). ^{DOK2}	<ol style="list-style-type: none"> a. Differentiate between the types of ROM. <ul style="list-style-type: none"> • Active (AROM) • Active Assistive (AAROM) • Passive (PROM) • Resistive (RROM) b. Demonstrate the proper procedure for using a goniometer to measure movements within each anatomical plane (flexion, extension, abduction, adduction, rotation, circumduction).
6. Research and discuss the various components of neuromuscular re-education and restoring muscular strength, endurance, and power. ^{DOK2}	<ol style="list-style-type: none"> a. Differentiate between the types of muscle contraction.

- Concentric
 - Eccentric
 - Isokinetic
 - Isometric
 - Isotonic
- b. Differentiate between open and closed chain exercises and demonstrate examples of each.
- Demonstrate various techniques to develop proprioception and spatial awareness (e.g., balance progressions [stable and unstable surfaces], gait training, rhythmic stabilization, proprioceptive neuromuscular facilitation [PNF], etc.).
- c. Discuss possible ways to assess a patient’s progression to return to play (or ADL).
Note: See the [Basics of Training and Conditioning](#) unit for more specific training and conditioning techniques.

Enrichment
<ol style="list-style-type: none">1. Explore the use of aquatic training.2. Utilize HOSA physical therapy skills competition guidelines.3. Research and explore newly developed therapeutic and rehabilitative techniques.

Unit 11: Injuries to the Head and Spine

Competencies and Suggested Objectives

1. Review and recognize the specific anatomy of the head and spine related to sports injuries.
DOK1

- a. Identify bones and bony landmarks related to head and spine injuries.
 - Mastoid process
 - Nasal bones (generic)
 - Occipital bone
 - Orbit (orbital socket)
 - Temporal bone
 - Vertebral spinous processes
- b. Identify the soft and connective tissues related to head and spine injuries and their respective functions.
 - Intervertebral discs
 - Latissimus dorsi
 - Sternocleidomastoid
 - Trapezius
- c. Identify the nerve tissues related to head and spine injuries.
 - Brachial plexus
 - Brain
 - Central nervous system
 - Cranial nerves
 - Peripheral nervous system
 - Spinal cord

2. Discuss the common injuries of the head and spine. DOK3

- a. Identify the common injuries and a given mechanism of each.
 - Concussions/Traumatic Brain Injury (TBI)
 - Epidural and subdural hematoma
 - Skull fractures
 - Spinal cord injuries
 - Spinal sprains and strains
 - Vertebral disc dysfunction
 - Vertebral fractures
- b. Identify and discuss special tests used to assess injuries to the head and spine.
 - Balance error scoring system (BESS) testing
 - Bilateral sensation and motor function
 - Pen-light assessment
- c. In student groups, complete the tasks below for at least one of the injuries in objective 2.a.
 - Demonstrate proper procedure for evaluation utilizing HOPS and SOAP notes.
 - Research and develop a treatment plan.
 - Develop a written, oral, or digital case study presentation discussing the injury, evaluation, and treatment plan chosen.

Unit 12: Injuries to the Chest and Abdomen

Competencies and Suggested Objectives

1. Review and recognize the specific anatomy of the chest and abdomen as related to sports injuries. ^{DOK1}
 - a. Identify the bones and bony landmarks related to injuries of the chest and abdomen.
 - Ribs
 - Sternoclavicular joint (SC joint)
 - Xyphoid process
 - b. Identify soft and connective tissues related to injuries of the chest and abdomen and their respective functions.
 - Abdominals
 - Intercostals
 - Obliques
 - Pectorals
 - c. Identify the organs related to injuries of the chest and abdomen.
 - Appendix
 - Diaphragm
 - Heart
 - Kidneys
 - Lungs
 - Spleen
2. Discuss common injuries of the chest and abdomen. ^{DOK3}
 - a. Identify common injuries and a given mechanism of each.
 - Abdominal strains
 - Hypertrophic cardiomyopathy
 - Internal organ contusions
 - Pectoralis strains
 - Pneumothorax
 - Rib fractures
 - Solar plexus
 - Sports hernias
 - Sternoclavicular (SC) joint sprain
 - Sudden death syndrome in athletes
 - Deformity
 - Hematemesis
 - Hematuria
 - Hypotension
 - Polydipsia
 - Restlessness
 - Swelling
 - Tachycardia
 - Tenderness

- Urticaria
- Weak Pulse
- b. Identify and discuss special tests used to assess injuries of the chest and abdomen.
 - Kehr's sign
 - McBurney's point
 - Quadrant assessment
 - Rib compression
- c. In student groups, complete the tasks below for at least one of the injuries in objective 2.a.
 - Demonstrate proper procedure for evaluation utilizing HOPS and SOAP notes.
 - Research and develop a treatment plan.
 - Develop a written, oral, or digital case study presentation discussing the injury, evaluation, and treatment plan chosen.

Unit 13: Injuries to the Upper Extremities

Competencies and Suggested Objectives

1. Review and recognize the specific anatomy of the upper extremities related to sports injuries. ^{DOK1}
 - a. Identify the bones and bony landmarks related to injuries of the upper extremities.
 - Shoulder
 - Acromioclavicular (AC) joint
 - Spine of scapula
 - Coracoid process
 - Glenohumeral joint
 - Distal head of the humerus
 - Elbow
 - Olecranon process
 - Medial and lateral epicondyles
 - Proximal heads of radius and ulna
 - Wrist/Hand
 - Scaphoid
 - Lunate
 - Hamate
 - Distal heads of radius and ulna
 - Distal and proximal heads of phalanges and metacarpals
 - b. Identify soft and connective tissues related to injuries of the upper extremities and their respective functions.
 - Shoulder
 - Rotator cuff muscles (SITS)
 - Supraspinatus
 - Infraspinatus
 - Teres minor
 - Subscapularis
 - Deltoid
 - Proximal head of the bicep
 - Distal head of the pectoralis
 - Labrum
 - Rhomboids
 - Elbow
 - Olecranon bursae
 - Ulnar collateral ligament
 - Radial collateral ligament
 - Distal heads of triceps and biceps
 - Brachioradialis
 - Wrist/Hand
 - Flexor muscle group
 - Extensor muscle group
 - Pronator muscle group

<ul style="list-style-type: none"> ○ Supinator muscle group ○ Ulnar collateral ligament (UCL) of the thumb <p>c. Identify nerve tissues related to injuries of the upper extremities.</p> <ul style="list-style-type: none"> ● Ulnar nerve ● Radial nerve ● Median nerve
<p>2. Discuss common injuries of the upper extremities. ^{DOK3}</p> <p>a. Identify common injuries and a given mechanism of each.</p> <ul style="list-style-type: none"> ● Shoulder <ul style="list-style-type: none"> ○ AC sprain ○ Labrum tear ○ Rotator cuff strain ○ Dislocation/subluxation ○ Impingement ● Elbow <ul style="list-style-type: none"> ○ UCL sprain ○ Medial and lateral epicondylitis ○ Olecranon bursitis ● Wrist/Hand <ul style="list-style-type: none"> ○ Carpal tunnel ○ Gamekeeper’s thumb ○ Boxer’s fracture ○ Finger deformities <p>b. Identify and discuss special tests used to assess injuries of the upper extremities.</p> <ul style="list-style-type: none"> ● Apprehension test ● Elbow valgus stress test ● Empty can test ● Impingement test <p>c. In student groups, complete the tasks below for at least one of the injuries in 2.a.</p> <ul style="list-style-type: none"> ● Demonstrate proper procedure for evaluation utilizing HOPS and SOAP notes. ● Research and develop a treatment plan. ● Develop a written, oral, or digital case study presentation discussing the injury, evaluation, and treatment plan chosen.

Enrichment
1. Describe and demonstrate the phases of throwing.

Unit 14: Injuries to the Lower Extremities

Competencies and Suggested Objectives

1. Review and recognize the specific anatomy of the lower extremities related to sports injuries. ^{DOK1}
 - a. Identify the bones and bony landmarks related to injuries of the lower extremities.
 - Hip/Thigh
 - Anterior and posterior iliac crest/spine
 - Ischial tuberosity
 - Greater trochanter of the femur
 - Knee
 - Medial and lateral femoral condyles
 - Tibial plateau
 - Tibial tuberosity
 - Patellofemoral groove
 - Joint line
 - Proximal head of the fibula
 - Ankle/Foot
 - Medial and lateral malleolus
 - Talus
 - Calcaneus
 - Styloid process
 - Navicular
 - Hallux
 - b. Identify the soft and connective tissues related to injuries of the lower extremities and their respective functions.
 - Hip/Thigh
 - Glutes
 - Iliotibial (IT) band
 - Adductor muscle group
 - Quadriceps group (as a whole)
 - Hamstring group (as a whole)
 - Knee
 - Anterior cruciate ligament (ACL)
 - Posterior cruciate ligament (PCL)
 - Medial collateral ligament (MCL)
 - Lateral collateral ligament (LCL)
 - Patella tendon
 - Meniscus
 - Ankle/Foot
 - Anterior tibialis
 - Gastrocnemius
 - Soleus
 - Plantar fascia
 - Lateral ankle ligaments (as a group)

<ul style="list-style-type: none"> ○ Deltoid ligament ○ Peroneal tendons (as a group) <p>c. Identify the nerve tissue related to injuries of the lower extremities.</p> <ul style="list-style-type: none"> ● Sciatic nerve
<p>2. Discuss common injuries of the lower extremities. ^{DOK3}</p> <p>a. Identify the common injuries and a given mechanism of each.</p> <ul style="list-style-type: none"> ● Hip/Thigh <ul style="list-style-type: none"> ○ Hip pointer ○ Labrum tear ○ Sciatica ○ Strains (e.g., hip flexor, quadriceps, hamstrings, groin) ○ Quad contusions ● Knee <ul style="list-style-type: none"> ○ Sprains (ACL, MCL, LCL, PCL) ○ Meniscal tear ○ Patella tendonitis ○ Patella dislocation/subluxation ● Ankle/Foot <ul style="list-style-type: none"> ○ Plantar fasciitis ○ Turf toe ○ Lateral ankle sprain ○ Syndesmosis sprain ○ Achilles sprain ○ Foot fracture (Jones and Lisfranc) <p>b. Identify and discuss special tests used to assess injuries to the lower extremities.</p> <ul style="list-style-type: none"> ● Anterior/posterior drawer ● Talar tilt ● Thomas test ● Valgus/Varus test <p>c. In student groups, complete the tasks below for at least one of the injuries in objective 2.a.</p> <ul style="list-style-type: none"> ● Demonstrate proper procedure for evaluation utilizing HOPS and SOAP notes. ● Research and develop a treatment plan. ● Develop a written, oral, or digital case study presentation discussing the injury, evaluation, and treatment plan chosen.

Enrichment
1. Identify pulse locations on the lower extremities.

Unit 15: Basics of Training and Conditioning Techniques

Competencies and Suggested Objectives
<p>1. Explain the principles of training and conditioning. ^{DOK3}</p> <p>a. Define components of fitness in relation to athletic performance.</p> <ul style="list-style-type: none">• Agility• Cardiovascular endurance• Flexibility• Muscle endurance• Muscular strength• Power• Speed <p>b. Research and discuss various training exercises for each of the fitness components in above and classify each exercise as aerobic or anaerobic.</p> <ul style="list-style-type: none">• Perform a baseline assessment on one of the components in objective 1.a., then develop a basic, short-term training plan that includes the concepts of overload principle, specificity, periodization, warm-up and cool down, and static and dynamic stretching.
<p>2. Explain the importance of proper training techniques for reduction of injury. ^{DOK2}</p> <p>a. Compare and contrast proper and improper lifting techniques for various exercises and discuss the importance of proper lifting technique for the prevention of injury.</p> <p>b. Explain the role that overtraining plays in the risk of injury.</p>
<p>3. Discuss how emerging technology has affected training and conditioning. ^{DOK3}</p> <p>a. Research and develop a presentation on how technology has affected fitness in both the general and athletic populations.</p>

Enrichment
<p>1. HOSA activity on healthy lifestyle.</p>

Unit 16: Nutrition in Sports

Competencies and Suggested Objectives

1. Explain the importance of good nutrition in sports. ^{DOK2}
 - a. Identify the six classes of nutrients and provide examples of each.
 - Carbohydrates
 - Fats
 - Minerals
 - Proteins
 - Vitamins
 - Water
 - b. Develop a digital presentation explaining the importance of nutrition (pre-/post-activity and during activity) regarding performance enhancement and injury recovery.
2. Differentiate between body weight and body composition along with the factors that influence both. ^{DOK2}
 - a. Research and discuss how nutrition effects body weight and body composition.
 - b. Research and discuss how to measure body weight and calculate body fat percentage by using skin-fold calipers or other body fat percentage assessment methods.
3. Identify what an eating disorder is and understand how eating disorders can challenge ideal activity performance. ^{DOK2}
 - a. Research and discuss the eating disorders/syndromes below and how they relate to athletic performance.
 - Anorexia
 - Bulimia
 - Binge eating
 - Female Athlete Triad Syndrome

Enrichment

1. Compare and contrast the diets of students and elite athletes.
2. Demonstrate objective 2.b. on willing classmates or athletic population.

Unit 17: Pharmacology and Drugs in Sports

Competencies and Suggested Objectives

1. Identify safety guidelines associated with the proper use of medication. ^{DOK1}
 - a. Research and discuss the various methods for drug administration.
 - Inhalation
 - Intradermal
 - Intramuscular
 - Intravenous
 - Oral
 - Rectal
 - Sublingual
 - Topical/Transdermal
 - b. Describe the basic process of pharmacokinetics relative to the processes of absorption, distribution, metabolism, and excretion.
 - c. Differentiate between classifications of common drugs used in sports, based on their pharmaceutical use.
 - NSAIDs
 - Anti-fungal
 - Antibiotic
 - Analgesics
2. Compare and contrast the physiological and psychological effects of ergogenic aids. ^{DOK2}
 - a. Define ergogenic aid.
 - b. Recognize the effects and possible dangers of common ergogenic aids.
 - Stimulants
 - Narcotics
 - Anabolic steroids
 - Beta blockers
 - Diuretics
 - Human growth hormone
 - Blood doping products
 - Blood transfusions
 - Erythropoietin (EPO)
 - Anesthetics
 - Corticosteroids
 - Creatine
 - c. Discuss the dangers of energy drinks and their effects on the body.
3. Explore the legal concerns related to pharmacology in sports. ^{DOK3}
 - a. Differentiate between administering and dispensing drugs from various medical professionals.
 - b. Research and debate the safety risk of approved and unapproved substances according to the FDA, NCAA, and IOC.
 - c. Discuss the importance and purpose of drug testing in athletes. Include illegal drugs and their consequences.

Enrichment
<ol style="list-style-type: none">1. Discuss the federal drug schedule set forth by the FDA.2. Discuss the opioid epidemic.

Unit 18A: Clinical Capstone Project: Sports Medicine Option

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 sports-related injuries and conditions. Students will learn the patient care process in sports medicine. They will apply their knowledge 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 sports-related injuries and conditions, including symptoms, causes, and treatments. ^{DOK4}
 - a. Develop a fictional patient involved in sports or physical activity whom they will care for throughout the duration of the clinical capstone project, incorporating specific details and factors to characterize this individual.
 - Name
 - Age
 - Sport or physical activity
 - Demographics
 - b. Select a sports-related injury or condition for their fictional patient. (*See table below for sports-related injuries and conditions*)
 - c. Explore the patient care process in sports medicine and apply it to their fictional patient by providing patient-centered care.
 - Assessment
 - Diagnosis
 - Maslow’s hierarchy of needs
 - Treatment Planning
 - Specific
 - Measurable or meaningful
 - Attainable or action-oriented
 - Realistic or results-oriented
 - Timely or time-oriented
 - Implementation
 - Monitoring and 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 Sports-Related Injuries and Condition

1. ACL tears

2. Bursitis
3. Concussions
4. Dislocations
5. Fractures
6. Heat-related illnesses (heatstroke, heat exhaustion, heat cramps)
7. Meniscus tears
8. Overuse injuries
9. Plantar fasciitis
10. Rotator cuff injuries
11. Shin splints
12. Sprains and strains
13. Stress fractures
14. Tendonitis
15. Tennis elbow

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.

Unit 18B: Clinical Capstone Project: Therapeutic Services Option

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 various conditions, focusing on therapeutic service roles such as Occupational Therapy, Physical Therapy, and Speech Therapy. Students will learn the patient care process and apply it 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 conditions and disorders that may require therapeutic services, including symptoms, causes, and treatments. ^{DOK4}
 - a. Develop a fictional patient with a therapeutic service need whom they will care for throughout the duration of the clinical capstone project, incorporating specific details and factors to characterize this individual.
 - Name
 - Age
 - Demographics
 - b. Select a condition or disorder that will be addressed in the fictional patient. (*See table below for conditions and disorders*)
 - c. Explore the patient care process in therapeutic services and apply it to their fictional patient by providing patient-centered care.
 - Assessment
 - Diagnosis
 - Maslow’s hierarchy of needs
 - Treatment Planning
 - Specific
 - Measurable or meaningful
 - Attainable or action-oriented
 - Realistic or results-oriented
 - Timely or time-oriented
 - Implementation
 - Monitoring and 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 Conditions and Disorders Requiring Therapeutic Services

1. Amputation

2. Arthritis
3. Autism spectrum disorder
4. Balance and vestibular disorders
5. Cardiopulmonary conditions (e.g., heart attack, COPD)
6. Cerebral palsy
7. Chronic pain
8. Developmental disabilities
9. Multiple sclerosis
10. Musculoskeletal injuries and disorders (e.g., fractures, sprains, strains, tendonitis)
11. Parkinson's disease
12. Speech and language disorders
13. Spinal cord injury
14. Stroke
15. Traumatic brain injury

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: Orientation, Safety, and Communication	
	1. Describe the purpose of the course.
	2. Establish the expectations, policies, and procedures of the sports medicine program.
	3. Review and implement the proper safety procedures and protocols in the various sports medicine environments.
	4. Review and implement proper communication and etiquette in the various sports medicine environments.
Unit 2: Employment Preparation and Embedded Word-Based Learning	
	1. Research current available jobs across the health care field.
	2. Define desirable traits and attitudes of team members in an employment setting.
	3. Through a real job search, analyze differences in the online application requirements of various job postings.
	4. Research and discuss real job advertisements.
	5. Demonstrate real-world interview skills led by the instructor and/or advisory committee members.
	6. Develop components of a work-based learning personal portfolio. Refer to the updated and state approved work-based learning requirements.
Unit 3: Therapeutic Services	
	1. Define therapeutic services and discuss the different careers within the field.
	2. Investigate a therapeutic service career and present the findings on the career.
Unit 4: The Sports Medicine Team	
	1. Differentiate between the various organizations contributing to sports medicine.
	2. Differentiate the roles of the sports medicine team.
	3. Analyze unique legal and ethical issues in sports medicine.
Unit 5: Health Care Administration	
	1. Identify the administrative responsibilities of a health care professional.
Unit 6: Protective Equipment and Techniques	

	1.	Identify the governing bodies that set standards for safety and for protective equipment in sports.
	2.	Identify and discuss the importance of proper application for the types of protective equipment mandated in sports for the head, chest, and lower extremities.
	3.	Discuss the importance of quality protective equipment for joints in sports.
	4.	Demonstrate the basic skills needed for taping in sports.
	5.	Describe the steps and techniques for casting.
	6.	Research the impact of emerging technology on protective equipment and techniques.
Unit 7: First Aid in Sports		
	1.	Discuss the necessary skills to provide first aid treatment.
	2.	Explore concepts for recording vital signs.
	3.	Describe the concepts for treating bleeding and the application of dressings and bandages.
	4.	Describe the concepts for treating shock.
	5.	Describe the concepts for treating musculoskeletal injuries.
	6.	Describe the concepts for treating sudden illnesses.
	7.	Describe the concepts for treating specific injuries.
	8.	Research and discuss the impact of emerging technology for first aid in sports.
Unit 8: Emergency Care in Sports		
	1.	Describe the components of an emergency action plan (EAP).
	2.	Perform skills obtained in training or certification for Basic Life Support for Health Care Providers according to the latest information from the American Heart Association or American Red Cross.
	3.	Describe the prevention, recognition, and treatment of various heat illnesses.
	4.	Transport an injured victim safely and efficiently.
	5.	In a role play situation, demonstrate the steps involved in an on-the-field injury assessment according to the American Hospital Association (AHA).
	6.	Research and discuss the impact of emerging technology for emergency care in sports.
Unit 9: Fundamental Concepts of Evaluation		
	1.	Differentiate between HOPS (history, observation, palpitation, special test) and SOAP (subjective, objective, assessment, plan).
	2.	Plan and conduct a pre-participation physical examination.
	3.	Demonstrate proper procedures for measuring and recording vital signs according to HOSA standards.
	4.	Determine the mechanism of injuries (MOI).
	5.	Explain the evaluation of injuries by diagnostic testing.

Unit 10: Modalities		
	1.	Identify the presentation and duration of the three phases of musculoskeletal healing in acute and chronic injuries.
	2.	Investigate the various types of therapeutic modalities.
	3.	Demonstrate the proper procedures used in sports medicine and physical therapy related to ambulation, transfers, and assistive devices according to HOSA standards.
	4.	Identify and discuss the primary components of a rehabilitation program.
	5.	Research and discuss the various components of range of motion (ROM).
	6.	Research and discuss the various components of neuromuscular re-education and restoring muscular strength, endurance, and power.
Unit 11: Injuries to the Head and Spine		
	1.	Review and recognize the specific anatomy of the head and spine related to sports injuries.
	2.	Discuss the common injuries of the head and spine.
Unit 12: Injuries to the Chest and Abdomen		
	1.	Review and recognize the specific anatomy of the chest and abdomen as related to sports injuries.
	2.	Discuss common injuries of the chest and abdomen.
Unit 13: Injuries to the Upper Extremities		
	1.	Review and recognize the specific anatomy of the upper extremities related to sports injuries.
	2.	Discuss common injuries of the upper extremities.
Unit 14: Injuries to the Lower Extremities		
	1.	Review and recognize the specific anatomy of the lower extremities related to sports injuries.
	2.	Discuss common injuries of the lower extremities.
Unit 15: Basics of Training and Conditioning Techniques		
	1.	Explain the principles of training and conditioning.
	2.	Explain the importance of proper training techniques for reduction of injury.
	3.	Discuss how emerging technology has affected training and conditioning.
Unit 16: Nutrition in Sports		
	1.	Explain the importance of good nutrition in sports.
	2.	Differentiate between body weight and body composition along with the factors that influence both.
	3.	Identify what an eating disorder is and understand how eating disorders can challenge ideal activity performance.
Unit 17: Pharmacology and Drugs in Sports		
	1.	Identify safety guidelines associated with the proper use of medication.

	2.	Compare and contrast the physiological and psychological effects of ergogenic aids.
	3.	Explore the legal concerns related to pharmacology in sports.
Unit 18A: Clinical Capstone Project: Sports Medicine Option		
	1.	Students will research and learn about common sports-related injuries and conditions, including symptoms, causes, and treatments.
Unit 18B: Clinical Capstone Project: Therapeutic Services Option		
	1.	Students will research and learn about common conditions and disorders that may require therapeutic services, including symptoms, causes, and treatments.

Appendix A: Industry Standards–National Athletic Trainers Association

	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18 A	18 B
Standards																				
NATA-1.1		X	X		X	X	X									X	X	X	X	X
NATA-1.2		X	X		X														X	X
NATA-1.3		X	X		X														X	X
NATA-1.4			X	X	X	X													X	X
NATA-1.5		X	X		X														X	X
NATA-2.1		X			X	X														
NATA-2.2						X														
NATA-2.3		X	X	X		X														
NATA-2.4						X														
NATA-2.5		X	X		X	X				X										
NATA-3.1		X				X														
NATA-3.2		X		X		X														
NATA-3.3		X				X														
NATA-3.4		X				X														
NATA-3.5		X				X														
NATA-3.6		X				X														
NATA-3.7		X				X														
NATA-4.1		X	X		X					X	X	X	X	X	X	X	X		X	X
NATA-4.2										X	X	X	X	X	X	X			X	X
NATA-4.3										X	X	X	X	X	X	X			X	X
NATA-4.4										X				X					X	X
NATA-4.5							X	X								X			X	X
NATA-4.6														X	X	X				
NATA-5.1								X	X	X		X	X	X	X	X	X	X	X	X
NATA-5.2								X	X	X		X	X	X	X	X	X	X	X	X
NATA-5.3																	X	X		
NATA-5.4													X	X		X	X	X	X	X
NATA-5.5		X				X		X	X			X	X				X		X	X
NATA-5.6																	X	X		
NATA-6.1	Core			X					X	X							X	X	X	X
NATA-6.2	Core			X					X	X							X	X	X	X
NATA-6.3	Core			X					X	X	X	X	X				X	X	X	X
NATA-6.4	Core			X					X	X	X						X	X	X	X
NATA-6.5	Core			X					X	X							X	X	X	X
NATA-6.6	Core			X					X	X	X	X	X				X	X	X	X
NATA-6.7	Core			X					X	X	X						X	X	X	X
NATA-6.8	Core			X					X	X	X						X	X	X	X
NATA-6.9	Core			X					X	X	X						X	X	X	X
NATA-6.10	Core			X					X	X							X	X	X	X
NATA-6.11	Core			X					X	X							X	X	X	X
NATA-6.12	Core			X					X	X	X						X	X	X	X
NATA-6.13	Core			X					X	X							X	X	X	X
NATA-7.1							X	X				X							X	X
NATA-7.2					X		X	X				X							X	X
NATA-7.3								X			X	X		X	X				X	X
NATA-7.4								X			X	X		X	X				X	X
NATA-7.5					X			X			X	X		X	X				X	X
NATA-7.6							X	X												
NATA-7.7							X	X												
NATA-8.1																	X	X	X	X
NATA-8.2																	X	X	X	X
NATA-8.3										X							X		X	X
NATA-8.4			X							X							X		X	X
NATA-8.5			X												X		X	X		
NATA-9.1								X	X	X	X	X	X	X	X	X			X	X
NATA-9.2								X	X	X	X	X	X	X	X	X			X	X

NATA-9.3								X	X	X	X	X	X	X	X	X	X	X	X
NATA-9.4								X	X	X	X	X	X	X	X	X	X	X	X
NATA-9.5								X	X	X	X	X	X	X	X	X	X	X	X
NATA-9.6								X	X	X	X	X	X	X	X	X	X	X	X
NATA-9.7								X	X	X	X	X	X	X	X	X	X	X	X
NATA-10.1								X	X								X	X	X
NATA-10.2								X	X								X	X	X
NATA-10.3								X	X	X							X	X	X
NATA-10.4			X		X			X	X									X	X
NATA-10.5					X			X	X	X		X	X	X	X			X	X
NATA-11.1								X	X										
NATA-11.2						X		X	X									X	X
NATA-11.3					X			X	X									X	X
NATA-11.4								X	X		X							X	X
NATA-11.5								X	X	X								X	X
NATA-11.6								X	X	X								X	X
NATA-12.1			X	X	X													X	X
NATA-12.2			X	X	X													X	X
NATA-12.3			X	X	X													X	X
NATA-12.4			X	X	X													X	X
NATA-13.1									X									X	X
NATA-13.2					X				X									X	X
NATA-13.3					X				X									X	X
NATA-14.1																		X	X
NATA-14.2																		X	X
NATA-14.3																		X	X
NATA-14.4																X		X	X
NATA-15.1			X						X									X	X
NATA-15.2			X						X									X	X
NATA-15.3			X						X									X	X
NATA-15.4			X						X									X	X

NATA-Secondary Course

Unit 1 Investigating the Field of Sports Medicine

- 1.1 Describe the historical foundations of athletic training.
- 1.2 Compare and contrast various professional organizations dedicated to athletic training and sports medicine.
- 1.3 Delineate the process for attaining national certification and state licensure for the athletic trainer.
- 1.4 List and differentiate between the roles and responsibilities of other health care professionals who make up the sports medicine team (e.g., physicians, physical therapists, occupational therapists, nurses, EMTs, etc.).
- 1.5 Analyze the different types of job opportunities and settings available to the athletic trainer as well as other members of the sports medicine team.

Unit 2 Understanding Concepts of Health Care Administration

- 2.1 Investigate the necessary components that make up a well-designed sports medicine facility.
- 2.2 List budgetary concerns.
- 2.3 Explain the legal importance of accurate, clear and up-to-date record keeping.
- 2.4 Create and analyze legal scenarios to consider as an administrator of an athletic health care facility in different settings.
- 2.5 Explain the difference between HIPAA and FERPA in relation to sharing medical information.

Unit 3 Analyzing Legal, Ethical and Insurance Considerations in Sports Medicine

- 3.1 List and define the 4 components of negligence.
- 3.2 Analyze legal considerations for health care professionals.
- 3.3 Compare and contrast legal concepts of liability, negligence, supervision, and assumption of risks.
- 3.4 Differentiate between legal and ethical actions in a given scenario.
- 3.5 Differentiate between different types of medical insurance and be able to explain various terms associated with third party reimbursement.
- 3.6 Determine the benefits of maintaining medical records to benefit the student athletes.
- 3.7 Discuss the importance of medical professionals obtaining National Provider Identifiers (NPIs)

Unit 4 Understanding the Basics of Training and Conditioning Techniques

- 4.1 Investigate the roles of the athletic trainer and the strength and conditioning coach on an athlete's fitness.
- 4.2 Explain the principles of conditioning.
- 4.3 Explain the role that overtraining plays in the risk of injury.
- 4.4 Design goals of a training and conditioning program for a specific sport/position on a team.
- 4.5 List the equipment needed for a comprehensive training and conditioning program.
- 4.6 Differentiate between the types of stretching and determine which is best in a given scenario.

Unit 5 Assessing Environmental Factors That Lead to Injury

- 5.1 Recognize atmospheric conditions that contribute to environmental injury.
- 5.2 Explain the environmental factors to be considered when caring for athletes.
- 5.3 Determine an appropriate SPF for specific individuals.
- 5.4 Explain the complications circadian dysrhythmia could have for various levels of athletes.
- 5.5 Discuss the importance of an EAP and policy for thunder and lightning as it relates to athletics.
- 5.6 Determine the risks associated with repeated overexposure to the sun.

Unit 6 Human Anatomy and Physiology: Discussion on the Following Body Systems

- 6.1 Integumentary
- 6.2 Skeletal
- 6.3 Nervous
- 6.4 Cardiovascular
- 6.5 Endocrine
- 6.6 Muscular
- 6.7 Lymphatic
- 6.8 Respiratory
- 6.9 Urinary
- 6.10 Excretory
- 6.11 Reproductive
- 6.12 Digestive
- 6.13 Immune

Unit 7 Understanding Basic Taping, Wrapping and Bracing for Injuries

- 7.1 List considerations to be given when properly fitting headgear.
 - 7.2 Debate the advantages and disadvantages of customized versus commercial protective devices.
 - 7.3 Identify the types of marketed and fabricated bracing devices as well as techniques.
 - 7.4 Debate the advantages and disadvantages of taping versus bracing.
 - 7.5 Determine which elastic wraps and wrapping procedures are most appropriate for specific scenarios.
 - 7.6 Differentiate between different types of adhesive and cohesive tape, and determine what application is best for a specific scenario.
 - 7.7 Identify 4 basic tape applications and the rationale of each.
- Unit 8 Understanding Sports Nutrition, Supplementation and Substance Abuse**
- 8.1 List the six classes of nutrients and give an example in each class.
 - 8.2 Explain the importance of good nutrition in enhancing performance and injury prevention.
 - 8.3 Differentiate between body weight and body composition along with the factors that influence both of them.
 - 8.4 Identify methods to calculate percent body fat and issues associated with each.
 - 8.5 Identify safe methods for weight loss as well as weight gain.
- Unit 9 Identifying Basic Tissue Response and Common Injuries**
- 9.1 Describe and illustrate the three phases of the healing process as it pertains to various soft tissue structures, including cartilage, ligament, muscle, tendon, and nerve.
 - 9.2 Explain the physiology and psychology of pain.
 - 9.3 Differentiate between sprains and strains, and differentiate between 1st, 2nd, and 3rd degree injuries.
 - 9.4 Illustrate various types of fractures and explain the forces required to produce each one.
 - 9.5 List the mechanical properties of tissue as they pertain to the stress-strain curve.
 - 9.6 Illustrate and describe the 5 types of tissue loading.
 - 9.7 Explain the relationship between poor body mechanics and injury potential.
- Unit 10 Recognizing and Preventing the Spread of Blood Borne Pathogens**
- 10.1 Investigate various blood borne pathogens.
 - 10.2 Explain the OSHA blood borne pathogen standard.
 - 10.3 Outline the components of a written exposure plan.
 - 10.4 Explain basic wound care procedures.
- Unit 11 Determining Appropriate Emergency Injury Management**
- 11.1 Determine the components of an EAP.
 - 11.2 Investigate the acute injury management techniques.
 - 11.3 List and describe the signs and symptoms of a concussion and demonstrate the recognition of them.
 - 11.4 Explain the steps involved in performing CPR.
 - 11.5 Recognize the common causes of cardiopulmonary complications in sports.
- Unit 12 Investigating the Psychological Aspects of Injury**

- 12.1 Investigate the psychological reactions one may see in the ill or injured athlete.
- 12.4 Determine the reasons why social support is important to the injured athlete.
- 12.3 Describe the role a health care provider plays when dealing with various psychological reactions.
- 12.4 Differentiate between a counselor, a psychologist and a psychiatrist.

Unit 13 Introduction to Rehabilitation and Modalities

- 13.1 List the safety procedures with each type of modality.
- 13.2 Investigate the role of various rehabilitation professionals.
- 13.3 Understand the five phases of rehabilitation.

Unit 14 Basic Pharmacology

- 14.1 Describe the difference between over-the-counter medications and prescription medications.
- 14.2 Discuss the different classifications of common medications.
- 14.3 Identify safety guidelines associated with proper medication use.
- 14.4 List socially used drugs and problems associated with athletics and performance.

Unit 15 Fundamental Concepts of Evaluation

- 15.1 Differentiate between HOPS and SOAP.
- 15.2 Illustrate the “anatomical position.”
- 15.3 Differentiate between manual muscle testing and resistive range of motion testing.
- 15.4 Examine cultural differences as it pertains to the manner in which an evaluation is conducted.

Appendix B: National Health Science Standards

	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18 A	18 B
Standards																				
NCHSE1.1								X	X	X	X	X	X	X	X	X			X	X
NCHSE1.2				X	X			X	X	X									X	X
NCHSE1.3			X		X					X	X								X	X
NCHSE2.1		X	X		X					X	X							X	X	X
NCHSE2.2		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
NCHSE3.1		X	X		X	X												X	X	X
NCHSE4.1		X	X	X	X	X													X	X
NCHSE4.2		X	X	X	X														X	X
NCHSE4.3		X	X																X	X
NCHSE4.4		X	X																X	X
NCHSE5.1		X			X	X													X	X
NCHSE5.2		X				X													X	X
NCHSE6.1		X	X			X													X	X
NCHSE6.2		X	X		X	X													X	X
NCHSE7.1				X	X			X	X	X							X	X	X	X
NCHSE7.2		X	X			X	X												X	X
NCHSE7.3		X	X			X								X					X	X
NCHSE7.4		X	X																X	X
NCHSE7.5		X	X																X	X
NCHSE8.1		X	X	X	X	X		X	X									X	X	X
NCHSE8.2		X	X	X	X	X		X	X									X	X	X
NCHSE9.1				X			X	X	X	X	X					X	X		X	X
NCHSE9.2				X			X	X	X	X	X				X	X			X	X
NCHSE10.1								X	X	X		X	X	X	X				X	
NCHSE11.1		X				X													X	X

National Consortium for Health Science Education-National Health Science Standards (08/2022)

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

1.2 Diseases and Disorders

1. Describe etiology, pathology, diagnosis, treatment, and prevention of common diseases and disorders, including, but not limited to the following:
2. Describe biomedical therapies as they relate to the prevention, pathology, and treatment of disease.

1.3 Medical Mathematics

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

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

1. Model verbal and nonverbal therapeutic communication.
2. Identify common barriers to communication.
3. Distinguish between subjective and objective information.
4. Interpret elements of the communication process using sender-message-receiver feedback model.
5. Modify communication to meet the needs of the patient/client and to be appropriate to the situation.
6. Describe appropriate interactions with patients throughout various stages of psychosocial development.

2.2 Medical Terminology

1. Use common roots, prefixes, and suffixes to communicate information.
2. Interpret common medical abbreviations to communicate information.

2.3 Written Communication Skills

1. Use proper elements of written and electronic communication (spelling, grammar, and formatting).
2. Prepare examples of technical and informative writing.
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

1. Differentiate healthcare delivery systems and healthcare related agencies.
2. Examine the healthcare consumer's rights and responsibilities within the healthcare system.
3. Analyze the impact of emerging issues on healthcare delivery systems.
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

1. Identify personal traits and attitudes desirable in a career ready member of a health team.
2. Summarize professional standards as they apply to hygiene, dress, language, confidentiality, and behavior.

4.2 Employability Skills

1. Apply employability/soft skills in healthcare.

4.3 Career Decision-making

1. Research levels of education, credentialing requirements, and employment trends in health professions.
2. Distinguish differences among careers within a health science pathway.

4.4 Employability Preparation

1. Develop components of a personal portfolio.
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

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

5.2 Legal Practices

1. Apply standards for the safety, privacy, and confidentiality of health information.
2. Describe advance directives.
3. Summarize the essential characteristics of a patient's basic rights within a healthcare setting.
4. Differentiate informed and implied consent.
5. Describe the concept of scope of practice.
6. Interpret procedures for reporting activities and behaviors that affect the health, safety, and welfare of others (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

1. Differentiate between ethical and legal issues impacting healthcare.
2. Identify ethical issues and their implications related to healthcare.

6.2 Cultural, Social, and Ethnic Diversity

1. Discuss religious, social, and cultural values as they impact healthcare.
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 self. Employ safe work practices and follow health and safety policies and procedures to prevent injury and illness.

7.1 Infection Control

1. Explain principles of infection transmission.
2. Differentiate methods of controlling the spread and growth of pathogens.

7.2 Personal Safety

1. Apply personal safety procedures based on Occupational Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations.
2. Demonstrate principles of body mechanics during patient care.

7.3 Environmental Safety

1. Apply safety techniques in the work environment.

7.4 Common Safety Hazards

1. Observe all safety standards related to the occupational exposure to hazardous chemicals standard (Safety Data Sheets [SDS]).
2. Comply with safety signs, symbols, and labels.

7.5 Emergency Procedures and Protocols

1. Practice fire safety in a healthcare setting.

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

Foundation Standard 8 Teamwork

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

8.1 Healthcare Teams

1. Evaluate roles and responsibilities of healthcare team members.
2. Identify characteristics of effective teams.

8.2 Team Member Participation

1. Recognize methods for building positive team relationships.
2. Analyze attributes and attitudes of an effective leader.
3. Apply effective techniques for managing team conflict.
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

1. Promote self-care behaviors of health and wellness.
2. Examine various aspects of behavioral health.
3. Describe public health strategies for prevention of disease.
4. Investigate complementary and alternative health practices as they relate to wellness and disease prevention.

9.2 Healthcare Across the Lifespan

1. Discuss physical, mental, social, and behavioral development and its impact on healthcare.
2. Identify socioeconomic determinants of health and wellness.

Foundation Standard 10 Technical Skills

Apply and demonstrate technical skills and knowledge common to health career specialties.

10.1 Technical Skills

1. Demonstrate procedures for measuring and recording vital signs in both normal and abnormal ranges -including but not limited to:
2. Obtain training or certification in:

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)

1. Identify components of an electronic health record (EHR) and/or electronic medical record (EMR).
2. Explore different types of health data collection tools.
3. Create electronic documentation that reflects timeliness, completeness, and accuracy.
4. Examine information systems policies, procedures, and regulations as required by national, state, and local entities.

Appendix C: 21st Century Skills

	Units	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	18	
Standards																				X	X
CS1		X		X	X						X			X		X				X	X
CS2		X	X								X			X		X				X	X
CS3		X	X	X																X	X
CS4		X		X																X	X
CS5																				X	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
CS9		X	X	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	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	X
CS16		X	X	X							X			X		X				X	X

CSS1-21st Century Themes

CS1 Global Awareness

- Using 21st century skills to understand and address global issues
- 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
- Understanding other nations and cultures, including the use of non-English languages

CS2 Financial, Economic, Business, and Entrepreneurial Literacy

- Knowing how to make appropriate personal economic choices
- Understanding the role of the economy in society
- Using entrepreneurial skills to enhance workplace productivity and career options

CS3 Civic Literacy

- Participating effectively in civic life through knowing how to stay informed and understanding governmental processes
- Exercising the rights and obligations of citizenship at local, state, national, and global levels
- Understanding the local and global implications of civic decisions

CS4 Health Literacy

- Obtaining, interpreting, and understanding basic health information and services and using such information and services in ways that enhance health
- Understanding preventive physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance, and stress reduction
- Using available information to make appropriate health-related decisions
- Establishing and monitoring personal and family health goals
- 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 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