

2027-2028 Healthcare Courses



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Kentucky Department of
EDUCATION

HEALTHCARE COURSES

2027 – 2028

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170111 Principles of Health Science

Principles of Health Science is an orientation and foundation for occupations and functions in any health care profession. The course includes broad health care core standards that specify the knowledge and skills needed by the vast majority of health care workers. The course focuses on exploring health career options, the history of health care, ethical and legal responsibilities, leadership development, safety concepts, healthcare systems and processes, and basic health care industry skills. This introductory course may be a prerequisite for additional courses in the Health Science program.

Recommended Grade Level: 9 – 12

Recommended Credit: 1

Students will:

1. Analyze and interpret medical milestones, conditions, trends, and issues to develop historical perspectives about the healthcare industry.
2. Explore the organizational structure of various health care facilities.
3. Observe, analyze, and interpret human behaviors, social groupings, and institutions to better understand people and the relationships among individuals and groups.
4. Identify how key systems affect services performed and the quality of health care.
5. Describe ethical practices with respect to cultural, social, and ethnic differences within the healthcare environment.
6. Recognize legal responsibilities, limitations, and the implications of actions within the health care industry and manage professional behavior accordingly (specifically related to HIPAA [Health Insurance Portability and Accountability Act] regulations).
7. Evaluate services, products, and resources available in the community and state in order to make effective consumer decisions.
8. Follow health and safety policies and procedures to prevent injury or illness through safe work practices.
9. Understand the roles and responsibilities of the health care team and interact effectively with all team members.
10. Explore Maslow's Hierarchy of Needs.
11. Recognize an acceptable Code of Conduct for a health care worker.
12. Use strategies for choosing and preparing for a career in the health care industry.
13. Apply methods of giving and obtaining information to communicate effectively, both orally and in writing.
14. Demonstrate skills and work habits that lead to success in future schooling and work.
15. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
16. Use information technology applications as appropriate to health care specialties.
17. Integrate literacy and numeracy concepts and processes across all curricular units.
18. Demonstrate key employability skills (interviewing, writing resumes, and completing applications) needed for further education or employment.

170131 Medical Terminology

Medical Terminology is designed to develop a working knowledge of language in all health science major areas. Students acquire word-building skills by learning prefixes, suffixes, roots and abbreviations. Students will learn correct pronunciation, spelling, and application rules. By relating terms to body systems, students identify the proper use of words in a medical environment. Knowledge of medical terminology enhances the student's ability to secure employment or pursue advanced education in health care successfully.

Recommended Grade Level: 9 – 12

Recommended Credit: .5

Students will:

1. Arrange word roots, prefixes, and suffixes to form medical terms.
2. Categorize word parts by body systems.
3. Interpret terms relating to all major body systems.
4. Correlate the origin of terms to other languages.
5. Identify medical acronyms, homonyms, and eponyms.
6. Recognize and define plural forms of medical terms.
7. Access resources to enhance understanding of medical terms.
8. Identify and use common medical abbreviations.
9. Relate medical terms to normal anatomy, growth and development, diagnostic procedures, pharmacology, surgery, mental health and medical specialties.
10. Compare the use of medical terms in the media and real-life situations.
11. Pronounce medical terms.
12. Demonstrate employability and social skills relevant to health careers.
13. Use medical terminology within a scope of practice in order to interpret, transcribe, and communicate information, data, and observations.
14. Recognize and define suffixes that denote nouns, adjectives, and singular and plural forms of medical words.
15. Categorize major prefixes in the following groups: position, number, measurement, negation, direction, and other prefixes.
16. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
17. Use information technology applications as appropriate to health care specialties.
18. Integrate literacy and numeracy concepts and processes across all curricular units.

170141 Emergency Procedures

This course will focus on potential emergencies. It is designed to promote an understanding of standard precautions necessary for personal and professional health maintenance and infection control. Upon successful completion of the course, the student will demonstrate the necessary skills in First Aid and Cardiopulmonary Resuscitation (CPR) and will be given the opportunity to take the complete examination as outlined by the sponsoring agency.

Recommended Grade Level: 9 – 12

Recommended Credit: .5

Students will:

1. Demonstrate proper emergency rescue and transport procedures.
2. Analyze emergencies and determine appropriate emergency care.
3. Investigate legal and ethical issues related to emergency procedures.
4. Demonstrate correct use of PPE (Personal Protective Equipment) in relation to standard precautions for the prevention or spread of disease.
5. Compose an emergency plan for the home.
6. Assess the physical and mental status of the client.
7. Research and debate issues concerning organ donation.
8. Evaluate data related to the mortality rate of the local community.
9. Identify and locate designated emergency shelters in the community.
10. Compare and contrast emergency procedures used in the media to reality.
11. Inspect the school and home for potential safety hazards.
12. Evaluate current health or safety issues in the community.
13. Research current data available on the economic impact of life support systems.
14. Evaluate emergency services and resources available in the community.
15. Demonstrate proficiency in CPR (cardiopulmonary resuscitation), AED, and first aid techniques.
16. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
17. Use information technology applications as appropriate to health care specialties.
18. Integrate literacy and numeracy concepts and processes across all curricular units.
19. Demonstrate employability and social skills relevant to careers.

170143 Introduction to Public Health

This course explores population health, health equity, and, of course, the public health enterprise which requires a collaborative approach across numerous disciplines, fields, and industries. This course will help students learn to think critically about and explore what public health is really about, along with its key concepts, challenges, and solutions.

Recommended Grade Level: 9 – 12

Recommended Credit: 1

Students will:

1. Address the history & philosophy of public health as well as its core values, concepts and functions across the globe and in society.
2. Recognize the contrast between clinical medicine versus public health.
3. Address the basic concepts, methods, and tools of public health data collection, use, and analysis, and why evidence-based approaches are an essential part of public health practice.
4. Address the socio-economic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities.
5. Address the fundamental characteristics and organizational structures of the U.S. health system as well as the differences in systems in other countries.
6. Describe how to access and evaluate the quality of health information and data in mass media and the internet.
7. Explain the concepts of prevention, detection, and control of infectious and chronic conditions, health disparities, and global health.
8. Recognize ways to promote and protect the health of vulnerable populations.
9. Identify organizations of healthcare and public health systems available in your community.
10. Differentiate between the social and environmental indicators that affect public health.
11. Evaluate epidemiological methods and study design for tracking the disease/disorder.
12. Examine rates, risk factors, and health status indicators of diseases/disorders.
13. Contrast between morbidity and mortality.
14. Identify and define the difference between an outbreak and an epidemic and how they are traced.
15. Identify and research careers in public health.

170167 Body Structures and Functions

Body Structures and Functions is designed to provide knowledge of the structure and function of the human body with an emphasis on normalcy. The interactions of all body systems in maintaining homeostasis will promote an understanding of the basic human needs necessary for health maintenance. Academic knowledge from life science core content as it relates to the human body will be included. Laboratory activities should be a part of the course when appropriate.

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Describe the basic structures and functions of cells, tissues, organs, and each body system as they relate to homeostasis.
2. Compare relationships among cells, tissues, organs, and systems.
3. Explain body planes, directional terms, quadrants, and cavities.
4. Analyze the interdependence of the body systems as they relate to wellness, disease, disorders, therapies, and care rehabilitation.
5. Analyze body system changes in light of diseases, disorders, and wellness.
6. Compare the aging process among the body systems.
7. Discuss and explain the interrelationships and pathophysiology behind specific illnesses affecting each body system.
8. Integrate literacy and numeracy concepts and processes across all curricular units.

170169 Medical Math

This course is designed for students who have completed courses containing all the required high school Kentucky Academic Standards (KAS) for Mathematics. If students have not completed courses containing all the required KAS for Mathematics, a Medical Math course should attend to the standards students still need. This course is designed to focus, utilize and build on mathematical skills commonly used in all health occupations. Students will use applied techniques, problem-solving and critical thinking to perform mathematical operations such as computations, ratios and proportions, weights and measurements and conversions beyond what was addressed in the student's foundational courses. A Medical Math course may include, but is not limited to, topics found in the (+) standards of the KAS for Mathematics. This course is strongly recommended for all Health Science majors. Successful completion of Algebra I is suggested prior to enrolling in this course. Leadership development will be provided through the HOSA student organization.

Recommended Grade Level: 9 – 12

Recommended Credit: 1

Students will:

1. Perform fundamental arithmetic operations on whole numbers, fractions, decimals, and percentages for accuracy and speed.
2. Understand mathematical procedures and use them appropriately.
3. Accurately calculate oral and parenteral dosages.
4. Relate mathematics to activities in health science and discuss the importance of a thorough understanding of mathematics to a successful career in the health profession.
5. Perform conversions with accuracy interchanging apothecary, metric, and household systems.
6. Analyze and compare over-the-counter medications according to the number of doses and unit price.
7. Observe and record the ways measurement is used in a medical laboratory.
8. Describe and perform steps in dosage calculations of oral and parenteral medications.
9. Describe and perform steps in dosage calculations in pediatric dosage calculations.
10. Describe and perform concepts of IV therapy calculation.
11. Use various types of graphs to interpret and analyze information.
12. Organize information using classification rules and systems such as symbols, abbreviations, and Roman numerals.
13. Estimate values for operations involving decimals and cognitively compute the results.
14. Represent fractions as ratios in simplest form.
15. Represent numbers in scientific notation.
16. Demonstrate knowledge of measurement systems and conversion principles.
17. Perform addition, subtraction, multiplication, and division of signed numbers.
18. Relate words to algebraic expressions.
19. Set up and solve proportions.
20. Find the mean, median, and mode for a group of values.
21. Use the 24-hour clock (military time).
22. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
23. Use information technology applications as appropriate to health care specialties.
24. Integrate literacy and numeracy concepts and processes across all curricular units.
25. Demonstrate employability and social skills relevant to health careers.

170199 Leadership Dynamics

This course is designed to assist students with developing skills needed to be successful leaders and responsible members of society. The students will develop personal attributes and social skills necessary for a successful transition into the world of work or further education. Emphasis will be placed on teamwork, problem-solving, critical thinking, oral and written communication, personal development, work ethics, and leadership. It is recommended that the student be a member of the student organization where they will have opportunities to apply the knowledge gained from this course.

Recommended Grade Level: 9 – 12

Recommended Credit: .5 – 1

Students will:

1. Define leadership: compare the types of leadership styles and assess the importance of qualified leaders to the success of organizations.
2. Analyze personal characteristics and qualities of successful leaders; construct a questionnaire and interview a person in a leadership role.
3. Participate in leadership opportunities available in the community.
4. Develop verbal and written communication skills to enhance success in school and transition to the world of work.
5. Prepare and present an informative, illustrative, or persuasive speech.
6. Participate in public relations activities by speaking, writing, or making presentations to a group.
7. Prepare a press release for publication.
8. Contact, in writing, a guest to attend an organizational meeting.
9. Demonstrate techniques used for proper business/professional etiquette—meeting people, travel, and table etiquette.
10. Serve as host when the guest you invite attends a meeting.
11. Analyze organizational structures and their components including bylaws, officers, committees, and program of work.
12. Identify the main components of and compare local, state, and national bylaws.
13. Demonstrate the use of parliamentary skills by conducting or presiding over a meeting.
14. List the steps for handling a motion and identify the classes of motions.
15. List the rules of debate.
16. Develop techniques to resolve conflict that arises in the home, school, community, and workplace.
17. Prepare an Employability Skills Portfolio.
18. Collaborate in a team setting using critical thinking and problem-solving skills.
19. Participate as an active member of HOSA-Future Health Professionals including local, state, and national events.

170301 Essentials of Sports Medicine

This course introduces students to the foundational knowledge and skills used in sports medicine. Students learn basic injury prevention, recognition, and care for common athletic injuries and sudden illnesses. Emphasis is placed on safety, communication, and understanding of the roles of professionals within the sports medicine environment. Leadership development will be provided through the HOSA student organization.

Recommended Grade Level: 11 – 12

Recommended Credit: .5

Students will:

1. Describe basic record keeping procedures and the documentation roles of the healthcare providers in Sports Medicine.
2. Define tort and negligence, including commission and omission negligence, and describe the criteria used to evaluate and establish proof of negligence.
3. Discuss the KY Good Samaritan law and describe appropriate procedures used by school personnel to limit liability during sports injury situations.
4. Explain the Health Insurance Portability and Accountability Act (HIPAA) of 1996 and FERPA and analyze local school district policies and procedures related to confidentiality, documentation, and civil litigation.
5. Discuss the ethical issues related to caring for injured athletes
6. Identify risk factors in sports settings and demonstrate safe field setup, monitoring, and hazard prevention.
7. Identify upper extremities surface landmarks, articulations, and muscles.
8. Demonstrate the shoulder, elbow, wrist, and hand range of motion and basic strength and assessment skills
9. Define the criteria for a sports injury; differentiate between acute and chronic injuries; and classify injury severity.
10. Describe mechanical forces that cause injury, how injuries affect tissues, and the inflammatory response.
11. Describe common acute and chronic upper extremity injuries, including causes, signs, and symptoms, and initial care.
12. Identify anatomical surface landmarks and describe the anatomy of the hip, pelvis, thigh, leg, and knee.
13. Identify lower extremities surface landmarks, articulations, and muscles.
14. Demonstrate range of motion and basic assessment skills for the hip, thigh, knee, and pelvis.
15. Identify lower leg, ankle, and foot landmarks and demonstrate range of motion and assessment skills.
16. Identify skeletal and soft tissue injuries of the pelvis, hip thigh, leg, and knee and discuss etiology, care, and prevention.
17. Identify common injuries of the pelvis, hip, thigh, leg, and knee, and describe causes, care, and prevention.
18. Research upper and lower extremities injury prevention strategies and explain appropriate brace use.
19. Identify anatomy of the skull, face, and central nervous system.
20. Demonstrate basic assessment and initial care for head and face injuries.
21. Identify and describe the anatomy of the cervical, thoracic, lumbar, sacral, and coccygeal spine.

22. Identify the mechanisms, signs and symptoms, and initial treatment guidelines for cervical, thoracic, and lumbar spinal injuries.
23. Explore what constitutes a catastrophic sports injury.
24. Identify thoracic and abdominal anatomy and describe common injuries, signs and symptoms, and initial treatment procedures.
25. Describe common skin infections and basic wound care procedures, including recognition, prevention and treatment.
26. Identify and describe common medical conditions affecting athletes and explain participation implications.
27. Explore the concept of shock, identify early signs, and demonstrate proper management techniques.
28. Describe pain assessment and pain management strategies.
29. Describe injury risks in team and individual sports, differentiate intrinsic and extrinsic risk factors.
30. Describe signs, treatment, and prevention of heat and cold illnesses and summarize NATA guidelines.
31. Describe the use, risks, effects, and consequences of substances used by athletes, including prescription drugs, steroids, creatine, and other performance enhancing aids.
32. Explore the principles of sports nutrition and weight management, including healthy eating and safe weight control.
33. Explore how nutrition, physical exams, rehabilitation, stretching, and coaching contribute to injury prevention and recovery.
34. Describe how personality traits and self-concept can influence an athlete's behavior, motivation, and performance.
35. Describe the psychological impact of sports injuries, including common emotional responses during recovery.
36. Analyze issues related to return to play decisions made by medical professionals, including psychological readiness and athlete well-being.
37. Explore fundamental aspects of the sports medicine team.
38. Explore roles and responsibilities of an athletic trainer's supervising physician within the secondary school setting.
39. Explain the role, professional responsibilities, and educational and certification requirements for becoming a board-certified athletic trainer.
40. Explore medical and sports medicine organizations that support education, ethics, and professional growth.
41. Apply leadership, teamwork, and professional skills through HOSA activities.

170302 Applied Sports Medicine

This course introduces students to the basic skills and knowledge used in sports medicine. Students learn how to help prevent, recognize, and care for injuries and illnesses in physically active individuals under the supervision of a licensed athletic trainer. Topics include safety principles, basic anatomy, injury management, taping and wrapping skills, nutrition, human performance, and an introduction to therapeutic modalities. This course prepares students for further study in sports medicine and related health fields. Leadership development will be provided through the HOSA student organization.

Recommended Grade Level: 11 – 12

Recommended Credit: .5

Students will:

1. Explore the advantages of the coordinated team approach for pre participation physical examinations.
2. Describe the initial injury assessment and physical examination process.
3. Demonstrate proper technique for assessing and recording vital signs as it relates to the Sports Medicine field.
4. Recognize emergencies that require CPR/AED and demonstrate and explain how to perform CPR and use an AED.
5. Demonstrate and explain acute care first aid skills including ambulatory aids related to Sports Medicine.
6. Describe and demonstrate proper crutch, cane, and walker fitting and safe ambulation with appropriate device.
7. Describe severe injury assessment, treatment, and initial care.
8. Describe the components of an effective emergency action plan, identify emergency team roles, and demonstrate accurate EMS communication.
9. Identify and describe therapeutic modalities used in injury management, including thermal, electrical, sound, light, and mechanical modalities.
10. Compare the effects of cryotherapy and thermotherapy and determine appropriate applications.
11. Demonstrate effective management of modality and rehabilitation areas to ensure safety and proper patient supervision
12. Identify the role of protective equipment in injury prevention and explain the steps for properly fitting protective equipment for sports such as football, softball, baseball, and soccer.
13. Explore principles of rehabilitation, therapeutic exercise, and reconditioning for injured athletes.
14. Describe the use of braces, supports, and assistive devices
15. Explain the purpose of taping and bandaging; identify common taping materials; demonstrate bandage applications; and describe how dressing selection affects wound healing.
16. Describe the purpose of each tape strip used for arch, ankle, shin, hand, wrist, and thumb applications and demonstrate safe tape and bandage removal.
17. Demonstrate and explain shoulder taping and wrapping techniques, including spica, acromioclavicular, and sternoclavicular supports.
18. Demonstrate and explain elbow, wrist, hand, thumb, and finger taping and wrapping techniques.
19. Demonstrate and explain thigh, hip, and pelvis support wrapping techniques.

20. Demonstrate and explain knee taping and wrapping techniques, including ligament and patellofemoral support.
21. Demonstrate and explain lower leg, ankle, and foot taping and wrapping techniques, including preventative and injury specific applications.
22. Apply range of motion principles to rehabilitation activities.
23. Identify injury mechanisms in adolescent athletes involving ligaments, tendons, growth plates, and cartilage and compare intrinsic and extrinsic factors contributing to sports
24. Explore the importance of physical fitness in overall health, performance, and injury prevention.
25. Describe and demonstrate standardized methods used to assess and test physical fitness.
26. Describe methods used to measure and determine body composition.
27. Accurately record and interpret data obtained from body composition, flexibility, and strength assessments.
28. Explain the principles of sports performance.
29. Apply leadership, teamwork, and professional skills through HOSA activities.

170501 Allied Health Core Skills

Allied Health Core Skills is designed to provide knowledge, concepts and psychomotor skills necessary for gainful employment as an entry-level health care worker. Assisting students in selecting a career major, classroom instruction and educational objectives are combined with learning experiences, observations, and a work-based learning opportunity such as internship, shadowing, or clinical rotation. This course is designed for students not enrolled in the Medicaid Nurse Aide program or the Patient Care Technician program.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: .5 – 1

Students will:

1. Develop and practice effective oral and written communication skills.
2. Understand the roles and responsibilities of individual members of the health care team.
3. Prepare supplies, equipment, and client for procedures according to facility protocol.
4. Use accepted ethical practices with respect to cultural, social, and ethnic differences.
5. Discuss legal responsibilities, limitations, and the implications of actions within the health care delivery setting.
6. Examine how key systems relate to the services performed and affect the quality of client care.
7. Present injury or illness through safe work practices and following health and safety policies and procedures.
8. Demonstrate professional etiquette and responsibility.
9. Demonstrate knowledge of applicable laws, statutes, or regulations in the career major area.
10. Demonstrate performance skills as outlined on the approved internship competency list.
11. Assess client health status according to respective professional standards and report results to the treatment team.
12. Demonstrate the effective use of time management skills.
13. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
14. Use information technology applications as appropriate to health care specialties.
15. Integrate literacy and numeracy concepts and processes across all curricular units.
16. Demonstrate employability and social skills relevant to health careers.
17. Explore individual health care careers.
18. Demonstrate skills related to specific health professions.

170502 Acute Care Basic Skills

This course introduces students to basic health care skills. It prepares individuals to perform routine nursing-related services to patients in an acute care setting under the training and supervision of an approved registered nurse. Certification is available upon successful completion of the National Healthcare Association (NHA) Patient Care Technician exam. This course is designed for students not enrolled in the Medicaid Nurse Aide program. A registered nurse teaches this course.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 12

Recommended Credit: 1 – 2

Students will:

1. Provide basic patient care under the direction of nursing staff (e.g., bathing, bed making, catheter care, assisting with ADLs and positioning).
2. Provide emotional support for a patient and family while performing patient care.
3. Set up equipment to be used by a patient (e.g., oxygen, suction, and monitors).
4. Provide care for a patient who has a feeding tube (e.g., monitor for aspiration precautions, observe tubing for kinks or problems).
5. Recognize and adapt an approach to care for a patient who has functional limitations (e.g., physical, sensory, cognitive, or mental impairment).
6. Report any changes in a patient's condition (e.g., level of consciousness, shortness of breath).
7. Monitor and record functions related to bodily functions (e.g., urine output, emesis, bowel movements).
8. Perform ostomy care, excluding irrigation.
9. Assist with ostomy care.
10. Monitor, record, and accurately measure intake and output (e.g., percentage of meal eaten, mL of fluid).
11. Perform passive range-of-motion exercises for patients.
12. Assist the patient with adaptive devices for ADLs (e.g., feeding and dressing devices, ambulatory assistive devices).
13. Perform patient rounding (e.g., check for consciousness, breathing, positioning.)
14. Remove peripheral IVS.
15. Assist in sterile and aseptic dressing changes.
16. Assist a patient with ambulation.
17. Transfer a non-weight-bearing patient (e.g., stretcher to bed.)
18. Transfer a weight-bearing patient.
19. Transport a patient via bed, stretcher, or wheelchair.
20. Apply immobility splints to a patient.
21. Provide skin care (e.g., repositioning, nonprescription creams, moisture barriers) and devices (e.g., air mattresses, draw sheets to prevent skin breakdown).
22. Identify and report changes in skin integrity.
23. Apply sequential compression devices.
24. Apply antiembolism stockings/compression hose.
25. Assist a patient with turn, cough, and deep breathing exercises.
26. Assist a patient with incentive spirometry.

27. Administer first aid.
28. Perform healthcare provider CPR.
29. Report critical values (e.g., blood glucose levels and vital signs) to the appropriate nurse assigned to the patient.
30. Recognize and report edema.
31. Recognize and report patient pain using a pain scale.
32. Recognize and report signs and symptoms of a wound infection.
33. Follow the Five Rights of Delegation.
34. Prioritize patient care based on the patient's needs.
35. Recognize visual abnormalities in patient specimens (e.g., stool, sputum, urine, emesis).
36. Obtain, record, monitor, and report vital signs.
37. Weigh a patient (e.g., standing, wheelchair-bound, using bed scales).
38. Provide noncurative care to a patient who is receiving hospice care.
39. Support the coping mechanisms of a patient and family who are dealing with grief, death, and dying.
40. Perform postmortem care.
41. Define, identify, and report abuse or neglect.
42. Prevent workplace injuries by following Occupational Safety and Health Administration (OSHA) guidelines.
43. Recognize and respond to emergencies (e.g., fire, hostage, and biological hazards).
44. Follow procedures for identifying patients.
45. Follow Joint Commission patient safety guidelines.
46. Follow safety procedures when using medical supplies and equipment (e.g., lock hospital bed, lock wheelchairs, raise stretcher side rails, apply safety belts and restraints).
47. Report and document work-related accidents.
48. Adhere to HIPPA regulations regarding protected health information.
49. Adhere to the Patients' Bill of Rights.
50. Communicate with other health care professionals using electronic health records and appropriate medical terminology.
51. Follow the chain of command.
52. Adhere to operational standards (e.g., JC, Clinical Laboratory Standards Institute, national standards, Hospital Consumer Assessment of Healthcare Providers, medical code of ethics).
53. Practice within the defined scope of patient care technician practice.
54. Use standard and transmission-based precautions.
55. Disinfect equipment before and after use.
56. Dispose of biohazardous materials (e.g., sharps containers, red bags) according to OSHA standards.
57. Follow exposure control plans in the event of occupational exposure.
58. Perform aseptic technique.
59. Perform sterile technique.
60. Perform capillary punctures.
61. Perform venipuncture (e.g., winged infusion set, evacuated tube system, syringe).
62. Collect nonblood specimens.
63. Perform blood culture collections.
64. Identify and respond to adverse reactions to collection (e.g., syncope, diaphoresis, nausea, and seizures).
65. Handle and transport blood samples.
66. Transport specimens based on handling requirements (e.g., temperature, light, time)

67. Label specimens at the bedside.
68. Verify appropriate functioning of equipment (e.g., sterility, expiration date, manufacturer's defects).
69. Perform quality control related to Clinical Laboratory Improvement Amendments - waived procedures.
70. Explain nonblood specimen collection procedures to the patient (e.g., stool, urine, semen, sputum).
71. Handle and transport patient-collected nonblood specimens.
72. Avoid preanalytical errors when collecting blood specimens (e.g., quantity not sufficient, hemolysis).
73. Adhere to the chain of custody guidelines when required (e.g., forensic studies, blood alcohol, drug screen).
74. Prepare the patient for an EKG (e.g., patient history, patient positioning, skin preparation, lead placement).
75. Apply EKG electrodes on the patient.
76. Identify and respond to signs and symptoms of cardiopulmonary compromise.
77. Identify and resolve artifacts from the tracing (e.g., wandering baseline, somatic, electrical).
78. Recognize and report dysrhythmias.
79. Respond to potentially life-threatening arrhythmia (e.g., ventricular tachycardia, ventricular fibrillation).
80. Verify EKG machine paper speed (e.g., 25mm, 50mm).
81. Verify EKG machine sensitivity (e.g., h, 1, 2).
82. Maintain EKG equipment.

170503 Allied Health Co-op*

Cooperative Education provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Cooperative Education program receive compensation for their work. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screening. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career choices.
2. Receive work experience related to career interests prior to graduation.
3. Integrate classroom studies with work experience.
4. Receive exposure to facilities and equipment unavailable in a classroom setting.
5. Increase employability potential after graduation.

* In section 2 of [705 KAR 4:041](#), Cooperative education shall meet the minimum requirements established in this section:
(a) Enrolled in a course included within the student's chosen career pathway within the same academic year; or
(b) A career pathway completer by the conclusion of the student's junior year; or
(c) Enrolled in an approved registered youth or pre-apprenticeship program.

170504 Patient Care Technician Internship

The internship provides supervised on-the-job work experience related to the students' education objectives. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates. Leadership development will be provided through the HOSA student organization.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career major choices.
2. Name credentialing agencies for careers related to career majors.
3. Trace the organizational structure of the career major and affiliating agency.
4. Research the history and rationale of the career major specialty.
5. Identify the different specialties in the career major.
6. Review theory related to a career pathway.
7. Demonstrate knowledge of applicable laws, statutes, or regulations in the career area.
8. Research common diseases or problems associated with a career major.
9. Receive work experience related to the career major prior to graduation.
10. Integrate classroom studies with work experience.
11. Receive exposure to facilities and equipment unavailable in a classroom setting.
12. Increase employability potential after graduation.
13. Demonstrate performance skills related to the career major area.
14. Demonstrate knowledge of first aid and CPR (cardiopulmonary resuscitation) as they relate to the area.
15. Demonstrate professional etiquette and responsibilities.
16. Demonstrate effective communication skills.
17. Practice team-building concepts.
18. Demonstrate effective use of time management skills.
19. Incorporate the use of related medical terminology and theory related to the career major.
20. Demonstrate correct observation skills.
21. Demonstrate proper use of the telephone, communication system, copier, and fax machine.
22. Recognize and provide environmental personal and patient safety.

170505 Patient Care Technician Co-op*

Cooperative Education provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Cooperative Education program receive compensation for their work. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screening. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career choices.
2. Receive work experience related to career interests prior to graduation.
3. Integrate classroom studies with work experience.
4. Receive exposure to facilities and equipment unavailable in a classroom setting.
5. Increase employability potential after graduation.

* In section 2 of [705 KAR 4:041](#), Cooperative education shall meet the minimum requirements established in this section:
(a) Enrolled in a course included within the student's chosen career pathway within the same academic year; or
(b) A career pathway completer by the conclusion of the student's junior year; or
(c) Enrolled in an approved registered youth or pre-apprenticeship program.

170549 EKG Internship

The internship provides supervised on-the-job work experience related to the students' education objectives. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates. Leadership development will be provided through the HOSA student organization.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career major choices.
2. Name credentialing agencies for careers related to career majors.
3. Trace the organizational structure of the career major and affiliating agency.
4. Research the history and rationale of the career major specialty.
5. Identify the different specialties in the career major.
6. Review theory related to a career pathway.
7. Demonstrate knowledge of applicable laws, statutes, or regulations in the career area.
8. Research common diseases or problems associated with a career major.
9. Receive work experience related to the career major prior to graduation.
10. Integrate classroom studies with work experience.
11. Receive exposure to facilities and equipment unavailable in a classroom setting.
12. Increase employability potential after graduation.
13. Demonstrate performance skills related to the career major area.
14. Demonstrate knowledge of first aid and CPR (cardiopulmonary resuscitation) as they relate to the area.
15. Demonstrate professional etiquette and responsibilities.
16. Demonstrate effective communication skills.
17. Practice team-building concepts.
18. Demonstrate effective use of time management skills.
19. Incorporate the use of related medical terminology and theory related to the career major.
20. Demonstrate correct observation skills.
21. Demonstrate proper use of the telephone, communication system, copier, and fax machine.
22. Recognize and provide environmental personal and patient safety.

170550 Allied Health Internship

The internship provides supervised on-the-job work experience related to the students' education objectives. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates. Leadership development will be provided through the HOSA student organization.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career major choices.
2. Name credentialing agencies for careers related to career majors.
3. Trace the organizational structure of the career major and affiliating agency.
4. Research the history and rationale of the career major specialty.
5. Identify the different specialties in the career major.
6. Review theory related to a career pathway.
7. Demonstrate knowledge of applicable laws, statutes, or regulations in the career area.
8. Research common diseases or problems associated with a career major.
9. Receive work experience related to the career major prior to graduation.
10. Integrate classroom studies with work experience.
11. Receive exposure to facilities and equipment unavailable in a classroom setting.
12. Increase employability potential after graduation.
13. Demonstrate performance skills related to the career major area.
14. Demonstrate knowledge of first aid and CPR (cardiopulmonary resuscitation) as they relate to the area.
15. Demonstrate professional etiquette and responsibilities.
16. Demonstrate effective communication skills.
17. Practice team-building concepts.
18. Demonstrate effective use of time management skills.
19. Incorporate the use of related medical terminology and theory related to the career major.
20. Demonstrate correct observation skills.
21. Demonstrate proper use of the telephone, communication system, copier, and fax machine.
22. Recognize and provide environmental personal and patient safety.

170552 Dental Assisting Internship

This course is designed to assist students with developing the skills needed to be successful dental assistants and responsible members of the health care society. The students will develop skills performed by the dental assistant. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: 1 – 2

Students will:

1. Use correct dental terminology when describing the teeth and landmarks of the teeth.
2. Name the universal codes for each tooth in the permanent teeth.
3. Provide the current location of each permanent tooth.
4. Identify and describe oral lesions.
5. Demonstrate procedures for performing hard tissue charting and accurately record the findings.
6. Demonstrate the process of performing extraoral and intraoral examinations and record the findings.
7. Explain the process of tooth decay and the various stages.
8. List three types of dental delivery systems.
9. Apply the principles of chair-side assisting to each specialty area.
10. Define pediatric dentistry and procedures common to this specialty.
11. Identify the role of the dental assistant in pediatric dentistry.
12. Discuss effective management of the pediatric patient in the dental operatory.
13. Describe the design of a dental treatment room.
14. List the type of dental equipment in a dental treatment room and its function.
15. Describe how to prepare a dental treatment room for patient treatment.
16. Describe the positioning of the patient and dental team.
17. Describe the principles of transferring and exchanging instruments.
18. Describe the three parts of a dental hand instrument.
19. List the types of hand-cutting instruments and their uses.
20. List the types of restorative instruments and their uses.
21. Describe additional accessory instruments used in dentistry.
22. Describe the use of preset trays and tubs.
23. List instruments and supplies contained in a basic setup.
24. Describe the low-speed handpiece.
25. Describe the attachments used on the low-speed handpiece.
26. Describe the high-speed handpiece and its use.
27. Describe rotary instruments and how they are used.
28. List the parts of a bur.
29. Demonstrate procedures used in moisture control.
30. Demonstrate the grasp and positioning of the dental assistant when using the high-volume oral evacuator tip.
31. Demonstrate the use of the air-water syringe.

32. Correctly follow tooth selection criteria for sealant placement.
33. Discuss and demonstrate the accepted sequence in sealant placement.
34. Process exposed intraoral and extraoral dental radiographs.
35. Clean x-ray processing equipment.
36. Mount and label radiographs.
37. Prepare radiographs for legal requirements, viewing, and filing.
38. Maintain radiographic equipment.
39. Provide patient safety measures and educate patients in radiographic safety.
40. Practice operator safety measures.
41. Monitor personal radiation exposure.
42. Identify principles and functions of extraoral dental.
43. Expose extraoral dental radiographs.
44. Interpret common conditions found on intraoral and extraoral dental radiographs.
45. Mount and label radiographs.
46. Prepare radiographs for legal requirements, viewing, and filing.
47. Select appropriate dental films.
48. Prepare and assist with temporary crowns.
49. Apply pit and fissure sealants.
50. Prepare, mix, transfer, and store restorative materials.
51. Prepare, mix, transfer, and store sedative and palliative materials.
52. Select, manipulate, and store impression materials.
53. Apply OSHA (Occupational Safety and Health Administration) safety measures when using toxic dental materials or irritants.
54. Prepare, mix, transfer, and store impression materials.
55. Select, manipulate, and store gypsum products.
56. Take impressions for study casts.
57. Fabricate and evaluate diagnostic casts.
58. Articulate casts.
59. Fabricate custom impression trays.
60. Apply safety measures when using gypsum materials.
61. Place, carve and finish amalgam restorations.

170555 EKG Technician

This course provides experience related to the student's educational objectives in the area of EKG (Electrocardiogram) technician. Upon successful completion of the course, students may be eligible to take the NHA EKG (Electrocardiogram) Technician Certification examination. It is best practice for students to participate in a work-based learning opportunity during this course. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Calculate a patient's heart rate from the EKG (Electrocardiogram) tracing (6-second method, R to R, sequencing).
2. Identify artifacts from the tracing (wandering baseline, somatic, electrical).
3. Resolve artifacts from the tracing (wandering baseline, somatic, electrical).
4. Record an EKG (Electrocardiogram) lead on a patient (3-lead, 5-lead, and 12-lead).
5. Verify the leads recorded on an EKG (Electrocardiogram).
6. Upload a completed EKG (Electrocardiogram) to a patient's electronic medical record.
7. Mount a completed EKG (Electrocardiogram) for a patient's chart.
8. Measure a patient's heart rhythm from the EKG (Electrocardiogram) tracing.
9. Inspect the waveforms of a cardiac cycle for symmetry, direction, and amplitude (P waves, QRS Complexes, ST segments, T waves).
10. Measure a patient's heart conduction from the EKG (electrocardiogram) tracing (PR-interval (PRI), QRS duration, QT-interval).
11. Identify the major classifications of arrhythmias from the EKG (Electrocardiogram) tracing (sinus, atrial, ventricular, and junctional).
12. Identify the major variances to waveforms related to ischemia, injury, or infarction.
13. Respond to potentially life-threatening arrhythmias.
14. Verify EKG (Electrocardiogram) machine paper speed (25mm, 50 mm).
15. Verify EKG (Electrocardiogram) machine sensitivity (h, 1, 2).
16. Maintain EKG (Electrocardiogram) equipment and the work environment.
17. Recognize pacemaker spikes on an EKG (Electrocardiogram) trace.
18. Prepare the patient for EKG (Electrocardiogram) monitoring, Holter monitoring, stress testing, and telemetry monitoring (patient history, cardiac medications, patient positioning).
19. Apply electrodes on patients for EKG (Electrocardiogram), Holter monitoring, stress testing, telemetry, pediatric patients, and patients with special considerations (right sided heart, posterior chest, amputations).
20. Respond to signs and symptoms of cardiopulmonary compromise.
21. Adhere to HIPAA (Health Insurance Portability and Accountability Act) regulations regarding Protected Health Information (PHI).
22. Monitor patient condition during stress testing.
23. Respond to complications during stress testing.
24. Verify patient understanding of Holter monitor procedures.

25. Obtain patient vital signs (heart rate, respiration, temperature, blood pressure, pulse oximetry).
26. Identify the structures of the heart on an illustration and describe their function.
27. Trace the flow of blood through the pulmonary and systemic circulatory systems on an illustration.
28. Describe the electrophysiology of the heart and relate the events of the cardiac conduction to the electrocardiogram.
29. Outline the process of electrocardiography.
30. Explain the purpose of measuring the standard 12-lead electrocardiogram.
31. List standards of calibrating and providing general maintenance of an electrocardiograph.
32. Explain the method and rationale for measuring the EKG (Electrocardiogram)/ECG (Electrocardiogram) in the exercising patient, including safety hazards.
33. Evaluate the electrocardiogram for cardiac rate, rhythm, and the presence or absence of ectopic beats.
34. Recognize PACs, atrial fibrillation, atrial flutter, PVCs, ventricular tachycardia, and ventricular fibrillation.
35. Recognize and describe the actions of various common cardiovascular agents.
36. Discuss arrhythmias and identify how to interpret those of the sinoatrial mode, sinus tachycardia, sinus arrest, and sinus bradycardia.
37. Discuss first-degree and second-degree AV blocks and explain how they can be identified on the ECG (Electrocardiogram)/EKG (Electrocardiogram).
38. Explain the difference between right and left bundle branch blocks and briefly define how each can be identified on an ECG (Electrocardiogram)/EKG (Electrocardiogram).
39. Discuss the role of the ECG (Electrocardiogram)/EKG (Electrocardiogram) technician as it relates to patient care and recording of the ECG (Electrocardiogram).
40. Identify and describe the various types of equipment and supplies used in monitoring and recording electrocardiograms.
41. Perform basic lead placement on adult, pediatric, and neonatal patients.
42. Prepare and position the patient for testing.
43. Attach electrodes to the patient's chest, arms, and legs, connect electrodes to leads from the EKG (Electrocardiogram) machine, and operate the machine to obtain a reading.
44. Explain testing procedures to patients to obtain cooperation and reduce anxiety.
45. Monitor patients' blood pressure and heart rate using EKG (Electrocardiogram) equipment during diagnostic and therapeutic procedures to notify the physician if something appears wrong.
46. Monitor patient's comfort and safety during tests, alerting physicians to abnormalities or changes in patient responses.
47. Observe gauges, recorders, and video screens of the data analysis system during imaging of the cardiovascular system.
48. Adjust equipment and controls according to physician's orders or established protocol.
49. Check, test, and maintain cardiology equipment.
50. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
51. Use information technology applications as appropriate to health care specialties.
52. Integrate literacy and numeracy concepts and processes across all curricular units.
53. Demonstrate employability and social skills relevant to health careers.

170558 Pharmacy Technician

This course may be completed as an independent study or classroom course during the student's senior year. The material covered will include orientation, federal law, medication review, aseptic techniques, calculations, and pharmacy operations. It is best practice for students to participate in a work-based learning experience at a pharmacy during this course. Upon successful completion of this internship, students may be eligible to take the Pharmacy Technician Certification examination in order to obtain national certification. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Understand, discuss, and define basic pharmacy terms and definitions.
2. Understand the Pharmacy Technician certification examination structure, the time allowed for the exam, and broad topic content.
3. Detail the requirements and process needed to maintain certification.
4. Understand federal laws that affect the pharmacy industry.
5. Discuss different laws and legislation that affect the pharmacy industry, including when they were enacted and their importance.
6. Discuss the importance of the Controlled Substance Act of 1970.
7. Outline filing procedures and maintain records according to state and federal laws, and drug substitution requirements.
8. Illustrate how a Doctor's DEA (Drug Enforcement Administration) Number is determined and its purpose.
9. Discuss storage requirements for Schedule II drugs.
10. Define the four phases of investigational drugs.
11. Define pharmacology, including the varied types of drugs, prescription types, medication dosage forms, and medical devices.
12. List drug interactions on the human body's major systems.
13. Review the different types of medication dosages (tablets, caplets, liquids, creams, emulsions).
14. Describe the different types of administration devices for certain medications and dosages.
15. Review drugs that affect the central nervous system, peripheral nervous system, cardiovascular system, and renal system to include drug interactions, mechanism of action, and manufacturer named drugs.
16. Review drugs classified as hormones, including drug interactions, mechanism of action, and manufacturer-named drugs.
17. Review drugs classified as anti-infectant drugs, including drug interactions, mechanism of action, and manufacturer-named drugs.
18. Review drugs classified as chemotherapy drugs, including drug interactions, mechanism of action, and manufacturer-named drugs.
19. Review blood and blood formation drugs, including drug interactions, mechanism of action, and manufacturer-named drugs.
20. Review vitamins, including drug interactions, mechanism of action, and manufacturer-

- named drugs.
21. Practice and demonstrate aseptic techniques.
 22. Demonstrate the proper use of various types of syringes.
 23. Define the uses of parenteral routes.
 24. Identify the four most widely used parenteral routes.
 25. Review sterile compounding procedures.
 26. Review the uses of various solutions used in the pharmacy including irrigation solutions, parenteral solutions, and TPN (Total Parenteral Nutrition).
 27. Examine the safe handling of antineoplastic agents used in the treatment of cancer.
 28. List the steps of a parenteral admixture order.
 29. Calculate dosages through the aspects of pharmacy mathematics.
 30. Convert units of measurement for the metric, avoirdupois, and apothecary systems.
 31. Interpret abbreviations and Roman numerals used in prescriptions.
 32. Practice the basics of fractions, decimals, and percent as used in pharmacology.
 33. Convert Fahrenheit to Centigrade temperatures.
 34. Utilize ratio proportion relationships for chemical mixtures used in the pharmacy.
 35. Calculate the amount of drug product to dispense or the number of days' supply from a dosage regimen.
 36. Determine the flow rate of an IV solution.
 37. Calculate powder volume.
 38. Review the various pricing methods used in retail pharmacy.
 39. Manage inventory controls of the pharmacy business with an overview of insurance claims and "third-party" reimbursement.
 40. Maintain an accurate patient profile.
 41. Detail what should be collected for a proper patient profile.
 42. Define key terms used in inventory management.
 43. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
 44. Use information technology applications as appropriate to health care specialties.
 45. Integrate literacy and numeracy concepts and processes across all curricular units.
 46. Demonstrate employability and social skills relevant to health careers.

170561 Pharmacy Technician Co-op*

Cooperative Education provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Cooperative Education program receive compensation for their work. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screening. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career choices.
2. Receive work experience related to career interests prior to graduation.
3. Integrate classroom studies with work experience.
4. Receive exposure to facilities and equipment unavailable in a classroom setting.
5. Increase employability potential after graduation.

* In section 2 of [705 KAR 4:041](#), Cooperative education shall meet the minimum requirements established in this section:
(a) Enrolled in a course included within the student's chosen career pathway within the same academic year; or
(b) A career pathway completer by the conclusion of the student's junior year; or
(c) Enrolled in an approved registered youth or pre-apprenticeship program.

170562 Pharmacy Technician Internship

The internship provides supervised on-the-job work experience related to the students' education objectives. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates. Leadership development will be provided through the HOSA student organization.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career major choices.
2. Name credentialing agencies for careers related to career majors.
3. Trace the organizational structure of the career major and affiliating agency.
4. Research the history and rationale of the career major specialty.
5. Identify the different specialties in the career major.
6. Review theory related to a career pathway.
7. Demonstrate knowledge of applicable laws, statutes, or regulations in the career area.
8. Research common diseases or problems associated with a career major.
9. Receive work experience related to the career major prior to graduation.
10. Integrate classroom studies with work experience.
11. Receive exposure to facilities and equipment unavailable in a classroom setting.
12. Increase employability potential after graduation.
13. Demonstrate performance skills related to the career major area.
14. Demonstrate knowledge of first aid and CPR (cardiopulmonary resuscitation) as they relate to the area.
15. Demonstrate professional etiquette and responsibilities.
16. Demonstrate effective communication skills.
17. Practice team-building concepts.
18. Demonstrate effective use of time management skills.
19. Incorporate the use of related medical terminology and theory related to the career major.
20. Demonstrate correct observation skills.
21. Demonstrate proper use of the telephone, communication system, copier, and fax machine.
22. Recognize and provide environmental personal and patient safety.

170567 Medical Laboratory Aide (Phlebotomist)

This course consists of a combination of classroom and hands-on experiences related to the student's education objectives in the area of Medical Laboratory Aide/Phlebotomist. Students may be eligible to take the National Healthcareer Association Phlebotomy Tech certification exam upon completing the course. It is best practice for students to participate in a work-based learning experience during this course. Students will be required to follow program and agency requirements for attendance and health screening. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Students must complete a minimum of 30 successful unaided venipuncture collections and 10 successful unaided capillary collections in order to take the National Healthcareer Association certification exam.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Collect, transport, handle, and process blood and urine specimens for analysis.
2. Adhere to all regulations and guidelines outlined by HIPAA (Health Insurance Portability and Accountability Act).
3. Gain career awareness and the opportunity to test career major choices.
4. Name credentialing agencies for careers related to career majors.
5. Trace the organizational structure for the career major and affiliating agency.
6. Research the history and rationale of the career major specialty.
7. Identify the different specialties in the career major.
8. Demonstrate knowledge of applicable laws, statutes, or regulations in career areas.
9. Research common diseases or problems associated with a career major.
10. Receive work experience related to the Medical Laboratory Aide/Phlebotomist career prior to graduation.
11. Integrate classroom studies with work experience.
12. Receive exposure to facilities and equipment unavailable in a classroom setting.
13. Demonstrate performance skills related to the Medical Laboratory Aide/Phlebotomist career.
14. Demonstrate knowledge of first aid and CPR (cardiopulmonary resuscitation) as they relate to the area.
15. Demonstrate professional etiquette and responsibilities, including effective communication skills.
16. Demonstrate effective use of time management and team-building skills.
17. Demonstrate correct observation skills.
18. Perform procedures to prevent disease transmission utilizing OSHA (Occupational Safety and Health Administration), CDC (Centers for Disease Control and Prevention) regulations, and universal precautions.
19. Recognize and provide environmental, personal, and patient safety.
20. Follow safety and emergency procedures and explain the use of a safety shower and safety apparel.
21. Demonstrate proper use of communication technology (phone, internet) used in the

career area.

22. Receive patients and visitors.
23. Observe, record, and report patient data.
24. Prepare accident and incident reports as necessary.
25. Assist with data entry and billing procedures.
26. Identify supplies and equipment commonly used in lab procedures.
27. Assist with quality control checks of equipment.
28. Log incoming and outgoing specimens.
29. Deliver supplies and lab specimens to designated areas.
30. Prepare specimens for shipment.
31. Maintain lab work surfaces and glassware using proper cleaning and safety procedures.
32. Use appropriate sterilization procedures.
33. Distribute supplies to the appropriate laboratory section.
34. Maintain inventory.
35. Maintain, label, and store routine lab chemical solutions.
36. Differentiate between various kinds of collection tubes and anticoagulants.
37. Identify normal values for blood and urine.
38. Name the components of a complete blood count (CBC).
39. Collect fluid and tissue specimens using appropriate collection procedures.
40. Explain collection procedures to patients.
41. Match laboratory requisition forms to specimen tubes.
42. Document the route of specimens from collection to laboratory analysis and diagnosis.
43. Assist and draw blood from capillaries by dermal punctures, such as heel or finger stick methods.
44. Assist and draw blood from veins by vacuum tube, syringe, or butterfly venipuncture methods.
45. Dispose of contaminated sharps in accordance with applicable laws, standards, and policies.
46. Dispose of blood or other biohazard fluids or tissues in accordance with applicable laws, standards, and policies.
47. Identify potential hazards in the lab.
48. Obtain a copy of MSDS (Material Safety Data Sheets) for materials used in the lab.
49. Demonstrate the procedure for the use of the eyewash station.
50. Organize and clean blood-drawing trays, ensuring that all instruments are sterile and all needles, syringes, or related items are of first-time use.
51. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
52. Use information technology applications as appropriate to health care specialties.
53. Integrate literacy and numeracy concepts and processes across all curricular units.
54. Demonstrate employability and social skills relevant to health careers.

170570 Phlebotomy Technician Internship

The internship provides supervised on-the-job work experience related to the students' education objectives. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates. Leadership development will be provided through the HOSA student organization.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career major choices.
2. Name credentialing agencies for careers related to career majors.
3. Trace the organizational structure of the career major and affiliating agency.
4. Research the history and rationale of the career major specialty.
5. Identify the different specialties in the career major.
6. Review theory related to a career pathway.
7. Demonstrate knowledge of applicable laws, statutes, or regulations in the career area.
8. Research common diseases or problems associated with a career major.
9. Receive work experience related to the career major prior to graduation.
10. Integrate classroom studies with work experience.
11. Receive exposure to facilities and equipment unavailable in a classroom setting.
12. Increase employability potential after graduation.
13. Demonstrate performance skills related to the career major area.
14. Demonstrate knowledge of first aid and CPR (cardiopulmonary resuscitation) as they relate to the area.
15. Demonstrate professional etiquette and responsibilities.
16. Demonstrate effective communication skills.
17. Practice team-building concepts.
18. Demonstrate effective use of time management skills.
19. Incorporate the use of related medical terminology and theory related to the career major.
20. Demonstrate correct observation skills.
21. Demonstrate proper use of the telephone, communication system, copier, and fax machine.
22. Recognize and provide environmental personal and patient safety.

170580 Medical Assisting Clinical Procedures

Introduces clinical skills and techniques used in the physician's office for patient examination, diagnosis and treatment. Introduces concepts related to electronic health records (EHR). Presents principles and practical applications related to medical asepsis, infection control, vital signs, routine and specialty patient examinations, diagnostic testing, and treatments with an emphasis on OSHA regulations.

Recommended Grade Level: 12

Recommended Credit: 1

This course follows the NHA Clinical Medical Assistant test plan. [NHA Clinical Medical Assistant Test Plan](#)

170581 Medical Assisting Co-op*

Cooperative Education provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Cooperative Education program receive compensation for their work. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screening. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career choices.
2. Receive work experience related to career interests prior to graduation.
3. Integrate classroom studies with work experience.
4. Receive exposure to facilities and equipment unavailable in a classroom setting.
5. Increase employability potential after graduation.

* In section 2 of [705 KAR 4:041](#), Cooperative education shall meet the minimum requirements established in this section:
(a) Enrolled in a course included within the student's chosen career pathway within the same academic year; or
(b) A career pathway completer by the conclusion of the student's junior year; or
(c) Enrolled in an approved registered youth or pre-apprenticeship program.

170582 Medical Assisting Internship

The internship provides supervised on-the-job work experience related to the students' education objectives. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates. Leadership development will be provided through the HOSA student organization.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career major choices.
2. Name credentialing agencies for careers related to career majors.
3. Trace the organizational structure of the career major and affiliating agency.
4. Research the history and rationale of the career major specialty.
5. Identify the different specialties in the career major.
6. Review theory related to a career pathway.
7. Demonstrate knowledge of applicable laws, statutes, or regulations in the career area.
8. Research common diseases or problems associated with a career major.
9. Receive work experience related to the career major prior to graduation.
10. Integrate classroom studies with work experience.
11. Receive exposure to facilities and equipment unavailable in a classroom setting.
12. Increase employability potential after graduation.
13. Demonstrate performance skills related to the career major area.
14. Demonstrate knowledge of first aid and CPR (cardiopulmonary resuscitation) as they relate to the area.
15. Demonstrate professional etiquette and responsibilities.
16. Demonstrate effective communication skills.
17. Practice team-building concepts.
18. Demonstrate effective use of time management skills.
19. Incorporate the use of related medical terminology and theory related to the career major.
20. Demonstrate correct observation skills.
21. Demonstrate proper use of the telephone, communication system, copier, and fax machine.
22. Recognize and provide environmental personal and patient safety.

170591 Applied Healthcare Projects

Special Topics in Healthcare is an expanded course offering the study of current world health-related issues. Topics may vary at the discretion of the instructor. **Course content and objectives must align with Healthcare standards upon approval from the Healthcare Consultant by submitting a pathway modification request.**

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Adhere to all regulations and guidelines outlined by HIPAA (Health Insurance Portability and Accountability Act).
2. Tasks will vary based on the topic covered.
3. Research current health-related issues.
4. Investigate employment opportunities and responsibilities of health care workers.
5. Develop work habits necessary for individual maturity and job competence.
6. Create a plan for productive time management.
7. Interpret instructional manuals.
8. Discuss articles from professional journals.
9. Formulate a plan for postsecondary education.
10. Prepare a written and oral culminating report based on experiences in the health science program.
11. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
12. Use information technology applications as appropriate to health care specialties.
13. Integrate literacy and numeracy concepts and processes across all curricular units.
14. Demonstrate employability and social skills relevant to health careers.

170601 Pre-Nursing Co-op*

Cooperative Education provides supervised on-the-job work experience related to the student's educational objectives. Students participating in the Cooperative Education program receive compensation for their work. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screening. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career choices.
2. Receive work experience related to career interests prior to graduation.
3. Integrate classroom studies with work experience.
4. Receive exposure to facilities and equipment unavailable in a classroom setting.
5. Increase employability potential after graduation.

* In section 2 of [705 KAR 4:041](#), Cooperative education shall meet the minimum requirements established in this section:
(a) Enrolled in a course included within the student's chosen career pathway within the same academic year; or
(b) A career pathway completer by the conclusion of the student's junior year; or
(c) Enrolled in an approved registered youth or pre-apprenticeship program.

170603 Pre-Nursing Internship

The internship provides supervised on-the-job work experience related to the students' education objectives. Work-based learning is designed to complement classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates. Leadership development will be provided through the HOSA student organization.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 10 – 12

Recommended Credit: .5 – 1

Students will:

1. Gain career awareness and the opportunity to test career major choices.
2. Name credentialing agencies for careers related to career majors.
3. Trace the organizational structure of the career major and affiliating agency.
4. Research the history and rationale of the career major specialty.
5. Identify the different specialties in the career major.
6. Review theory related to a career pathway.
7. Demonstrate knowledge of applicable laws, statutes, or regulations in the career area.
8. Research common diseases or problems associated with a career major.
9. Receive work experience related to the career major prior to graduation.
10. Integrate classroom studies with work experience.
11. Receive exposure to facilities and equipment unavailable in a classroom setting.
12. Increase employability potential after graduation.
13. Demonstrate performance skills related to the career major area.
14. Demonstrate knowledge of first aid and CPR (cardiopulmonary resuscitation) as they relate to the area.
15. Demonstrate professional etiquette and responsibilities.
16. Demonstrate effective communication skills.
17. Practice team-building concepts.
18. Demonstrate effective use of time management skills.
19. Incorporate the use of related medical terminology and theory related to the career major.
20. Demonstrate correct observation skills.
21. Demonstrate proper use of the telephone, communication system, copier, and fax machine.
22. Recognize and provide environmental personal and patient safety.

170610 Introduction to Nursing and Health Care System

This course provides a historical overview of current health care, including medical economics, ethical and legal parameters, and roles and responsibilities of healthcare team members, with an emphasis on reflective nursing practice. Medical terminology, therapeutic communication techniques, concepts of health, health assessment, self-care and basic needs related to ADL (activities of daily living) across the lifespan are explored.

Prerequisites: Current CPR (cardiopulmonary resuscitation) card for Health Care providers and successful completion of the Kentucky Medicaid Nurse Aide Certification Exam.

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Explain the U.S. healthcare system, including delivery systems and the role of healthcare providers.
2. Explain the history of nursing as it relates to current practice.
3. Explain the ethical and legal parameters governing the practice of practical nursing.
4. Use medical terminology accurately and appropriately.
5. Demonstrate the use of effective therapeutic communication techniques.
6. Relate, at a beginning level, activities of daily living to the client's age and health status to determine care needs.
7. Collect psychosocial and functional information for the assessment of an individual's health status.
8. Provide basic health care information to promote and maintain health.

170611 Development of Care Giver Role

This course provides an introduction to nursing and the nursing process as related to client activities of daily living across the life span, opportunity to develop and practice psychomotor skills related to health assessment, promotion, maintenance, and illness prevention.

Prerequisite: Current CPR (cardiopulmonary resuscitation) card for Health Care providers and successful completion of the Kentucky Medicaid Nurse Aide Certification Exam.

Recommended Grade Level: 11 – 12

Recommended Credit: 1 – 2

Students will:

1. Use basic health care measures that maintain, promote, and restore optimal health and wellness.
2. Use the nursing process as the method of problem-solving in response to client needs.
3. Demonstrate basic physical assessment techniques.
4. Respond to assistive needs of individuals with functional alterations throughout the life span.
5. Exhibit safe and caring behaviors when providing nursing care.
6. Identify situations where client advocacy is indicated.
7. Develop a beginning awareness of self as a care provider.
8. Effectively use selected technological devices that impact client care in the health care setting.
9. Identify situations beyond one's knowledge and experience and seek appropriate assistance.
10. Give a brief history of persons involved with the early development of microbiology.
11. Describe the infectious process and the etiologic agents.
12. Explain the various body defenses against infection, including immune response.
13. Define and list the differences between normal flora and pathogenic organisms affecting the body.
14. Explain the control of microbe growth and standard precautions (OSHA [Occupational Safety and Health Administration] requirements) necessary for a safe work environment for the health care provider.
15. Interview an individual recognizing subjective and objective data.
16. Identify a nursing diagnosis on a care plan.
17. Write goals using the proper format.
18. Identify nursing actions on a care plan.
19. Discuss principles of documentation in small groups.
20. Present a sample of documentation of nursing care.
21. Perform an admission, transfer, and discharge.
22. Assist with a physical examination.
23. Plan a family menu for one day with consideration of nutritional and economic needs.
24. Plan a two-day meal for individuals through each stage of the life cycle.
25. Demonstrate the techniques in physical assessment including inspection auscultation, percussion, and palpation.
26. Perform vital signs.
27. Perform coughing and deep breathing exercises.
28. Auscultate the chest breath sounds.

29. Identify normal and abnormal breath sounds.
30. Obtain the diet history of an individual.
31. List criteria used in assessing the metabolic needs of diverse groups.
32. Feed individuals according to age and specific needs.
33. Weigh and measure individuals.
34. Perform blood glucose tests.
35. Assist with the use of a bedpan and urinal.
36. Diaper an infant.
37. Collect urine specimens, routine and clean-catch.
38. Calculate and record I and O.
39. Apply urine collection devices, infants and external catheters.
40. Assess bowel sounds.
41. Identify methods of promoting safety across the life span.
42. Obtain various cultures from patients, including throat, wound, stool, and urine.
43. Perform proper gloving to prevent the spread of infection.
44. Perform concurrent cleaning of the patient's room.
45. Discuss in pre- and post-conference, various isolation technique precautions.
46. Demonstrate standard precautions.
47. Discuss, in small groups, community resources and support systems available to promote and maintain the psychosocial needs of the individual and ways of reaching self-actualization.
48. Demonstrate safe transporting of a patient in a wheelchair, including up and down ramps and on and off elevators.

170614 Pharmacological and Other Therapeutic Modalities

This course provides an introduction to techniques used to administer commonly used drugs, dosage calculations, diagnostic studies, other related medical therapies and legal responsibilities.

Prerequisites: Current CPR (cardiopulmonary resuscitation) card for Health Care Provider and successful completion of Medicaid Nurse Aide [170631](#)

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Calculate drug dosages accurately.
2. Identify the fundamental principles related to pharmacology when administering medications.
3. Identify the legal and ethical responsibilities of the practical nurse when administering medications.
4. Identify common therapeutic and diagnostic procedures with pharmacological implications.
5. Perform conversions with accuracy interchanging apothecary, metric, and household systems.
6. Perform steps in dosage calculations of oral and parenteral medications.
7. Perform steps in pediatric dosage calculations.
8. Perform IV therapy calculations.
9. Practice interpreting abbreviations and symbols of medication orders.
10. Discuss the significance of the Controlled Substance ACT of 1970.
11. Discuss the legal and ethical nursing responsibilities related to medications.
12. Discuss, in small groups, the nurse's role in drug action/interaction.
13. List the "rights of drug administration."
14. List causes of common medication errors.
15. Practice various routes of administering drugs in simulated situations and the clinical facility.
16. Practice calculating selected drug dosages.

170631 Medicaid Nurse Aide

This course is an instructional program that prepares individuals to perform routine nursing-related services to patients in long-term care facilities under the training and supervision of an approved registered nurse. State Registry is available upon successful completion of state written and performance examination. Prior to offering this course, the instructor and health science program must be approved for meeting state requirements set by the Cabinet for Health and Family Services.

Recommended Grade Level: 11 – 12

Recommended Credit: 1 – 2

Students will:

1. Practice good personal hygiene.
2. Maintain good personal health.
3. Exhibit acceptable behavior.
4. Work cooperatively with others.
5. Maintain confidentiality.
6. Observe the Resident's Rights.
7. Identify and report abuse or neglect to the appropriate person.
8. Use a plan of care to meet residents' needs.
9. Communicate with residents, family, and staff.
10. Assist residents in the use of intercom/call system/telephone.
11. Report observations/information to appropriate personnel.
12. Recognize health problems related to the aging process.
13. Recognize the needs of the resident with cognitive impairment.
14. Assist with providing recreational activities for the residents.
15. Assist with giving postmortem care.
16. Follow standard precautions and bloodborne pathogens standards.
17. Wash hands aseptically.
18. Provide for environmental safety.
19. Adjust bed and side rails.
20. Assist with the application of protective devices.
21. Report unsafe conditions to the appropriate person.
22. Assist with the care of residents with oxygen.
23. Follow fire and disaster plans.
24. Assist resident who has fallen.
25. Assist resident who has fainted.
26. Assist a resident who is having a seizure.
27. Clear the obstructed airway – the conscious adult.
28. Use elevation, direct pressure, and pressure points to control bleeding.
29. Serve meals and collect trays.
30. Recognize diet modifications/restrictions.
31. Check the food tray against the diet list.
32. Feed or assist residents in eating.
33. Administer after meal care.
34. Record and report intake and output.
35. Give bed bath.
36. Assist resident with the partial bath.

37. Assist resident with tub bath.
38. Assist residents with showers.
39. Make an unoccupied (closed) bed.
40. Make an occupied bed.
41. Perform or assist in performing oral hygiene for the conscious/unconscious resident.
42. Assist with or shave resident.
43. Give backrub.
44. Give perineal care.
45. Shampoo/groom hair.
46. Give nail care.
47. Assist residents with dressing and undressing.
48. Provide urinary catheter care.
49. Provide care for the urinary incontinent resident to include incontinence brief.
50. Provide care for the bowel incontinent resident.
51. Assist resident in bladder retraining.
52. Assist residents in bowel retraining.
53. Assist residents in using bedpan/urinal.
54. Assist with enema administration.
55. Collect routine/clean catch urine specimen.
56. Collect stool specimens.
57. Collect sputum specimen.
58. Use good body mechanics.
59. Perform or assist with range of motion exercises.
60. Turn and position the resident in bed.
61. Transfer resident to and from bed/chair.
62. Use a mechanical lift to transfer residents.
63. Apply and use a gait belt.
64. Assist residents with standing/walking.
65. Assist residents in using a cane/walker.
66. Transport resident by wheelchair.
67. Move resident between stretcher and bed.
68. Assist with admission, in-house transfer, and discharge of residents.
69. Measure and record resident temperature by using oral, auxiliary, rectal and tympanic routes using a non-mercury glass/electronic thermometer.
70. Measure and record radial pulse.
71. Measure and record respiration.
72. Measure and record blood pressure.
73. Measure and record height/weight.
74. Assist in the prevention of pressure/circulatory ulcers.
75. Apply elastic stockings.
76. Don and doff personal protective equipment.

170640 Health Science Microbiology/Infection Control

This course is designed to promote an understanding of the effects of microorganisms on the human body. The study includes standard precautions necessary for health maintenance and infection control. The focus is on the reduction of diseases that interfere with basic human needs.

Recommended Grade Level: 11 – 12

Recommended Credit: .5

Students will:

1. Define terms related to microbiology.
2. Discuss cell structure and taxonomy of prokaryotic/eukaryotic cells and organelles.
3. Explore the diversity and physical characteristics of microorganisms, including bacteria, fungi, algae, protozoa, parasites, and viruses.
4. Review basic chemistry concepts.
5. Identify the principles of microbial growth, control and death and actions of microbial control agents.
6. Discuss principles of disease, disease transmission and control, and epidemiology, including commonly encountered pathological microorganisms.
7. Identify methods to prevent the spread of communicable diseases.
8. Identify OSHA (Occupational Safety and Health Administration) requirements necessary for a safe work environment for the health care provider.
9. Discuss human defenses against infectious diseases.

170701 Principles of Biomedical Science

Student work involves the study of human medicine, research processes and an introduction to bioinformatics. Students investigate the human body systems and various health conditions, including heart disease, diabetes, sickle-cell disease, hypercholesterolemia and infectious diseases. A theme throughout the course is to determine the factors that led to the death of a fictional person. After determining the factors responsible for the death, the students investigate lifestyle choices and medical treatments that might have prolonged the person's life. Key biological concepts, including homeostasis, metabolism, inheritance of traits, feedback systems, and defense against disease, are embedded in the curriculum. The course is designed to provide an overview of all the courses in the Biomedical Science program and to lay the scientific foundation necessary for student success in the subsequent courses.

Recommended Grade Level: 9 – 11

Recommended Credit: 1

Students will:

1. Demonstrate professional work habits.
2. Demonstrate the ability to organize, implement, and troubleshoot specific tasks.
3. Demonstrate the ability to work in teams and as an individual.
4. Define biotechnology and its role.
5. Demonstrate knowledge of the history of biotechnology.
6. Describe careers in biotechnology.
7. Demonstrate competency in using computer office applications.
8. Demonstrate the principles of DNA isolation.
9. Perform Polymerase Chain Reaction (PCR).
10. Perform electrophoresis.
11. Perform separation techniques.
12. Explain and perform aseptic technique.
13. Demonstrate the concepts of microbial culture.
14. Demonstrate the concept of mammalian cell culture.
15. Demonstrate knowledge of bioethics.
16. Demonstrate a knowledge of professional ethics.
17. Demonstrate general requirements for laboratory safety.
18. Identify and use personal protective equipment (PPE).
19. Demonstrate ability to implement safety protocols.
20. Document lab activities and findings according to guidelines.
21. Use laboratory glassware correctly and safely.
22. Use electrophoresis equipment correctly and safely.
23. Use centrifuges correctly and safely.
24. Use microscopes correctly and safely.

170702 Human Body Systems

Students will engage in the study of the processes, structures and interactions of the human body systems. Important concepts in the course include communication, transport of substances, locomotion, metabolic processes, defense, and protection. The central theme is how the body systems work together to maintain homeostasis and good health. The systems will be studied as “parts of a whole,” working together to keep the amazing human machine functioning at an optimal level. Students will design experiments, investigate the structures and functions of body systems, and use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary actions, and respirator operations. Students will work through interesting real-world cases and often play the role of biomedical professionals to solve medical mysteries.

Recommended Grade Level: 10 – 11

Recommended Credit: 1

Students will:

1. Demonstrate professional work habits.
2. Demonstrate the ability to organize, implement, and troubleshoot specific tasks.
3. Demonstrate the ability to work in teams and as an individual.
4. Define biotechnology and its role.
5. Demonstrate the knowledge of the history of biotechnology.
6. Describe careers in biotechnology.
7. Demonstrate competency in using computer office applications.
8. Demonstrate the ability to use the scientific method.
9. Perform Polymerase Chain Reaction (PCR).
10. Perform electrophoresis.
11. Explain and perform aseptic technique.
12. Demonstrate knowledge of bioethics.
13. Demonstrate a knowledge of professional ethics.
14. Demonstrate general requirements for laboratory safety.
15. Identify and use personal protective equipment (PPE).
16. Demonstrate ability to implement safety protocols.
17. Document lab activities and findings according to guidelines.
18. Use laboratory glassware correctly and safely.
19. Use electrophoresis equipment correctly and safely.
20. Use centrifuges correctly and safely.
21. Use pH meters correctly and safely.
22. Use microscopes correctly and safely.

170703 Medical Interventions

Student projects will investigate various medical interventions that extend and improve quality of life, including gene therapy, pharmacology, surgery, prosthetics, rehabilitation, and supportive care. Students will study the design and development of various medical interventions, including vascular stents, cochlear implants, and prosthetic limbs. They will review the history of organ transplants and gene therapy and read current scientific literature to be aware of cutting-edge developments. Using 3D imaging software and current scientific research, students will design and build a model of a therapeutic protein.

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Demonstrate professional work habits.
2. Demonstrate the ability to organize, implement, and troubleshoot specific tasks.
3. Demonstrate the ability to work in teams and as an individual
4. Define biotechnology and its role
5. Demonstrate knowledge of the history of biotechnology
6. Describe the life cycle of biotechnology product development
7. Identify the application of the biotechnology industry
8. Describe careers in biotechnology
9. Demonstrate competency in validating and using laboratory equipment
10. Demonstrate competency in using computer office applications
11. Perform basic laboratory math skills
12. Apply statistical analysis to interpret data
13. Demonstrate the ability to use the scientific method
14. Properly prepare buffers and solutions
15. Demonstrate the concepts of recombinant technology
16. Demonstrate the principles of DNA isolation
17. Perform Polymerase Chain Reaction (PCR)
18. Perform electrophoresis
19. Perform separation techniques
20. Explain and perform aseptic technique
21. Demonstrate the concepts of microbial culture
22. Demonstrate the concept of laboratory automation
23. Demonstrate knowledge of bioethics
24. Demonstrate knowledge of professional ethics
25. Demonstrate general requirements for laboratory safety
26. Identify and use personal protective equipment (PPE)
27. Demonstrate ability to implement safety protocols
28. Document lab activities and findings according to guidelines
29. Use laboratory glassware correctly and safely
30. Use electrophoresis equipment correctly and safely
31. Use centrifuges correctly and safely
32. Use pH meters correctly and safely.
33. Demonstrate knowledge of thermocyclers.
34. Use microscopes correctly and safely.

170704 Biomedical Innovation

This is a capstone course that allows students to apply biomedical science concepts to real-world medical and health challenges. Students explore emerging technologies, research, ethics, and problem-solving in areas such as biotechnology, medical devices, and public health through project-based learning. The course emphasizes critical thinking, collaboration, and communication while preparing students for further education and careers in biomedical and health-related fields. Leadership development will be provided through the HOSA student organization.

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Demonstrate professional work habits.
2. Demonstrate the ability to organize, implement, and troubleshoot specific tasks.
3. Demonstrate the ability to work in teams and as an individual.
4. Define biotechnology and its role.
5. Describe careers in biotechnology.
6. Demonstrate competency in validating and using laboratory equipment.
7. Demonstrate competency in using computer office applications.
8. Apply statistical analysis to interpret data.
9. Demonstrate the ability to use the scientific method.
10. Demonstrate the concepts of recombinant technology.
11. Perform electrophoresis.
12. Explain and perform aseptic technique.
13. Demonstrate knowledge of bioethics.
14. Demonstrate a knowledge of professional ethics.
15. Demonstrate general requirements for laboratory safety.
16. Identify and use personal protective equipment (PPE).
17. Demonstrate ability to implement safety protocols.
18. Document lab activities and findings according to guidelines.
19. Use laboratory glassware correctly and safely.
20. Use electrophoresis equipment correctly and safely.

170708 Biomedical Science Internship

The internship provides supervised on-the-job work experience related to the students' education objectives. Work-based learning is designed to complement the classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates.

Recommended Grade Level: 12

Recommended Credit: 1

Students will:

1. Gain career awareness and the opportunity to test career major choices.
2. Name credentialing agencies for careers related to career majors.
3. Identify the different specialties in the career major.
4. Review theory related to a career pathway.
5. Demonstrate knowledge of applicable laws, statutes, or regulations in the career area.
6. Research common diseases or problems associated with a career major.
7. Receive work/internship experience related to the career major prior to graduation.
8. Integrate classroom studies with work experience.
9. Receive exposure to facilities and equipment unavailable in a classroom setting.
10. Increase employability potential after graduation.
11. Demonstrate performance skills related to the career major area.
12. Demonstrate professional etiquette and responsibilities.
13. Demonstrate effective communication skills.
14. Practice team-building concepts.
15. Demonstrate effective use of time management skills.
16. Demonstrate proper use of the telephone, communication system, copier, and fax machine.
17. Recognize and provide environmental personal and patient safety.

170709 Biomedical Science Co-op*

Cooperative Education for CTE (Career and Technical Education) courses provide supervised worksite experience related to the student's identified career pathway. A student must be enrolled in an approved pathway course during the same school year that the co-op experience is completed or have already completed the pathway the previous year. Students who participate receive a salary for these experiences in accordance with local, state, and federal minimum wage requirements according to the [Work-Based Learning Manual](#). Students will be required to follow program and agency requirements for attendance and health screening. These may include but are not limited to drug screens, TB (tuberculin) skin tests, and immunization certificates. Leadership development will be provided through HOSA.

Prerequisites: Select any (3) three from the following: [170701](#) Principles of Biomedical Science, [170702](#) Human Body Systems, [170703](#) Medical Interventions, [170704](#) Biomedical Innovation

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Demonstrate appropriate workplace behaviors, professionalism, and ethical conduct in a biomedical or health-related work setting.
2. Apply biomedical science knowledge and technical skills in real-world biomedical, health care, or laboratory environments.
3. Follow all workplace rules, confidentiality expectations, and safety procedures (including HIPAA and OSHA, when applicable).
4. Follow all emergency procedures and hazard-communication protocols.
5. Build career readiness skills and demonstrate professional etiquette.
6. Use effective communication skills when interacting with supervisors, coworkers, and patients or clients, as appropriate.
7. Collaborate effectively with diverse teams to contribute to shared goals and maintain a productive workplace environment.
8. Demonstrate problem-solving and critical-thinking skills to support daily workplace tasks and responsibilities.
9. Demonstrate time management, reliability, and accountability in meeting workplace schedules and expectations.
10. Perform basic biomedical or clinical tasks permitted by the worksite supervisor
11. Use appropriate tools, equipment, and technology relevant to the biomedical or health sciences.
12. Reflect on work-based learning experiences to evaluate personal strengths, areas for growth, and career interests in biomedical or health science fields.
13. Demonstrate employability skills that support a successful transition to postsecondary education, training, or employment in biomedical and health-related careers.
14. Accurately document work activities, competencies, and learning experiences as required by the cooperative education program.

* In section 2 of [705 KAR 4:041](#), Cooperative education shall meet the minimum requirements established in this section:
(a) Enrolled in a course included within the student's chosen career pathway within the same academic year; or
(b) A career pathway completer by the conclusion of the student's junior year; or
(c) Enrolled in an approved registered youth or pre-apprenticeship program.

170710 Advanced Behavioral Health I

Introduces students to the basics of mental health, safe communication, and professional skills used in behavioral health settings. Students learn how to recognize warning signs of stress or crisis, understand common mental health conditions, and know when to seek help from a trusted adult. The course also covers legal and ethical responsibilities, personal safety practices, wellness strategies, and how healthcare systems and community support connect to mental health. Leadership development will be provided through the HOSA student organization.

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Explore trauma aware, client centered therapeutic communication techniques while maintaining professional boundaries.
2. Adjust communication approaches by recognizing barriers, using respectful redirection, and supporting positive, patient centered interactions.
3. Describe the importance of team based decision making, leadership, accountability, and professional collaboration in behavioral health settings.
4. Explain how psychological safety is built through consistency, trust, and effective communication.
5. Identify early warning signs of escalation and apply de-escalation strategies using calm, non-threatening communication.
6. Identify environmental/situational safety factors and practice safe body positioning during client interactions.
7. Describe appropriate reporting procedures for health and safety concerns and identify when mandatory reporting applies.
8. Explore legal, ethical, and regulatory requirements—including informed consent, confidentiality, basic criminal and civil law (e.g., abuse, battery, negligence/malpractice, invasion of privacy, libel/slander), national standards (TJC/CMS/state), and ethical decision making frameworks.
9. Practice cultural understanding in caring for others and describe how stigma can impact clients and their families.
10. Identify risk factors for abuse, neglect, and suicide and know when/how to access crisis supports (e.g., 988).
11. Describe the basic steps of a mental health assessment, including common screening tools (like the C SSRS) and how the DSM helps identify different conditions.
12. Distinguish major mental health disorder categories by core diagnostic features (e.g., anxiety/OCD/trauma; depressive/bipolar; psychotic; substance-related; developmental; disruptive; eating).
13. Explore treatment approaches, factors that affect treatment success, and prevention strategies.
14. Practice basic documentation skills that are accurate and professional (objective vs. subjective, appropriate quotes), and apply confidentiality and mandatory reporting requirements.
15. Explore stress-management, coping, and crisis-intervention strategies to support client well-being and recovery.
16. Understand how Electronic Health Records (EHRs) support care quality and coordination and their use in behavioral health and IDD settings.

17. Recognize differences between healthcare delivery systems and community partners, and how emerging issues (bioethics, epidemiology, socioeconomics, technology) affect delivery and access.
18. Identify major psychotropic medication categories and their side effects, including metabolic risks.
19. Identify key differences between voluntary and involuntary hospitalization and the roles of staff in each.
20. Identify healthy lifestyle habits and explain how choices like sleep, nutrition, and physical activity support mental and emotional health.
21. Promote positive psychology concepts (hope, resilience, strengths, community support) and understand the role of community in recovery.
22. Explore how laws help make mental health coverage fair and identify examples of insurance rules that help people get the care they need.
23. Demonstrate basic infection prevention and personal safety practices (e.g., hand hygiene, appropriate PPE selection and use).
24. Identify OSHA/CDC guidance relevant to behavioral health settings and respond appropriately to common infestation risks (e.g., bed bugs, lice).
25. Describe how views of mental and physical health vary across the lifespan and have changed over time.
26. Explore major changes in mental health care over time and how these shifts have affected individuals, families, and communities.
27. Explore how insurance coverage for mental health has changed, including parity laws, benefits, and cost barriers that impact access to care.
28. Explore the basic rights of forensic patients and how staff help keep everyone safe and treated fairly.
29. Recognize common models used to understand mental health, substance use, trauma, and co-occurring conditions, and how these issues affect care.
30. Explore the stages of change in recovery and recognize how relapse fits into the process, along with the supports that help at each stage.
31. Recognize basic warning signs that a youth may be experiencing a mental health concern and know how to respond safely by contacting a trusted adult or appropriate support.
32. Apply leadership, teamwork, and professional skills through HOSA activities.

170711 Advanced Behavioral Health II

Introduces students to the basics of intellectual and developmental disabilities, advocacy, assessment, and provision of services across the lifespan, with consideration for specialized physical and mental health treatment needs of individuals with intellectual and developmental disabilities. Students learn how to provide interventions based on assessed needs, work with families and other natural supports, and participate in person-centered planning. The course also covers the history of disability services, professional ethics, and the challenges of working with families and service systems. Leadership development will be provided through the HOSA student organization.

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. Explain differing meanings of disability and how the term “intellectual and developmental disabilities is currently understood.
2. Explore how people with disabilities have been treated kindly and maltreated, sometimes simultaneously.
3. Explore approaches to understanding the early 21st century’s emphasis on equality, community living, and social inclusion in the context of the history of disabilities.
4. Explore limitations of perspectives that focus only on “deficits” and “impairments.”
5. Explain what is meant by advocacy, its role in civil rights and the work of disability rights advocates and their role in obtaining civil rights and protections.
6. Explore how guardianship status affects a person’s civil rights.
7. Identify what is meant by supported decision making and how it is supported in international law.
8. Provide an overview of causal or contributing factors, including biomedical, social, behavioral, and educational risk factors.
9. Explore comorbid sensory impairments and mental health disorders.
10. Explain issues of mental ill-health in people with intellectual and developmental disabilities.
11. Identify supports for people with behavioral and mental health issues.
12. Understand the importance of ongoing and continuous assessment for development of good interventions.
13. Promote the necessity of both informal and formal supports for the efficient functioning of the intellectual and developmental disability service system.
14. Explore the centrality of person-directed and family-directed approaches to good planning.
15. Promote the importance of monitoring the implementation of plans.
16. Explore professional and personal dilemmas for disability support personnel as a result of the person-centered and family-centered approach.
17. Understand the vital roles that people who provide direct support to people with disabilities play in the quality of life of people with intellectual and developmental disabilities.
18. Identify competencies of direct support professionals and trends in training and education.
19. Explain self-directed and consumer-controlled services for people with intellectual and developmental disabilities and their families.
20. Understand why many people with intellectual disability need behavioral intervention

- and the types of behavioral intervention.
21. Identify best practices regarding interventions for problem behavior.
 22. Explore why professionals in the intellectual and developmental disabilities field find some families so challenging.
 23. Identify communication forms and functions.
 24. Explore improving communication through an interdisciplinary team approach.
 25. Explain what constitutes augmentative and alternative communication devices and systems and identify options for their use.
 26. Explore the roles that families, schools, employers, and community services play in the transition to adult life of youth with disabilities.
 27. Explain the evolution of customized employment, seamless transition from school, and employer-led initiatives as viable employment models.
 28. Explore values that serve as goals for successful adult lifestyles, including integrated, community-based employment; community living; positive social relationships; use of leisure time; and community engagement.
 29. Identify and work to address needs throughout all family subsystems—marital, sibling, parental, and extended family—and across the family life cycle.
 30. Understand family–professional partnerships as helpful in attending to each domain of family quality of life.
 31. Explain myths and facts pertaining to the sexuality of people with intellectual and developmental disabilities.
 32. Explore the importance of maintaining high quality of life, social connectedness, and physical and mental well-being as components of supports for older-age people with intellectual disability.
 33. Explore the notion of supported decision making to assist individuals with intellectual and developmental disabilities to retain independence in making important life decisions.
 34. Explain the deliberative model of the health care professional–patient relationship.
 35. Identify the unique primary healthcare needs of individuals with intellectual and developmental disabilities.
 36. Explore ways to understand, prevent, assess, and treat mental and emotional distress, psychiatric disorders, and problem behaviors in people with intellectual and developmental disabilities.
 37. Promote equipping care providers to overcome challenges when working with this population.

170801 Principles of Veterinary Assisting

This course provides students with a foundational understanding of the roles and responsibilities of veterinary assistants, focusing on the professional, safety, and clinical skills needed to succeed in a veterinary environment. Students will gain essential knowledge about the veterinary profession, workplace safety, animal handling, and basic grooming and medical procedures.

Recommended Grade Level: 9 – 12

Recommended Credit: 1

Students will:

1. Demonstrate knowledge of the program standards, objectives, dress code, and safety guidelines.
2. Demonstrate knowledge of OSHA (Occupational Safety and Health Administration) and DEA (Drug Enforcement Administration) regulations for work in a veterinary facility.
3. Describe the roles and responsibilities of different careers in veterinary medicine.
4. Understand the human-animal bond.
5. Demonstrate professional appearance and language in the workplace.
6. Demonstrate appropriate use of electronic communication in the workplace.
7. Demonstrate knowledge of safety precautions with storing, handling, and disposing of biological and therapeutic agents, pesticides, and hazardous waste.
8. Recognize common zoonotic hazards and how to safely handle animals with zoonotic diseases.
9. Describe isolation procedures and identify when isolation is appropriate.
10. Demonstrate knowledge of chemical hazards and how to safely handle common chemicals in the veterinary hospital.
11. Demonstrate knowledge of proper disposal of hazardous medical waste.
12. Demonstrate knowledge of nosocomial infections and how to prevent them.
13. Demonstrate knowledge of common species terms.
14. Clean and disinfect a kennel, cage, exam room and other areas of the hospital.
15. Remove animal from an enclosure.
16. Walk a dog on a slip leash in a controlled manner.
17. Place a halter on a horse and lead it in a controlled manner.
18. Identify common ectoparasites and endoparasites.
19. Recognize common AKC (American Kennel Club) dog breeds and common CFA (Cat Fanciers Association) cat breeds.
20. Explain how to handle rabies suspects and handle sample safely.
21. Sex a cat.
22. Identify normal and abnormal animal behavior.
23. Brush a dog or cat using the correct grooming tool, including the removal of mats.
24. Groom a horse and pick out hooves.
25. Trim a dog's nails.
26. Trim a cat's nails.
27. Demonstrate proper use of clippers and clipper blades.
28. Maintain clippers and clipper blades.
29. Perform therapeutic bathing, basic grooming, and basic clipping of small animals.
30. Express anal glands using the external method.
31. Clean normal ears.
32. Restrain a dog or cat in a sternal, lateral, and ventrodorsal recumbency position.
33. Place a commercial and leash muzzle on a dog.
34. Place a commercial muzzle on a cat.
35. Utilize a catchpole.
36. Apply an Elizabethan collar to an animal.

170802 Veterinary Assisting Skills

This course provides students with a comprehensive foundation in the essential skills needed for a career as a veterinary assistant. Through hands-on practice and theoretical instruction, students will learn to perform critical tasks in a veterinary clinic or hospital setting. The course covers a range of topics, including animal anatomy and physiology, medical recordkeeping, clinical procedures, patient care, and animal handling techniques.

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Demonstrate knowledge of anatomical terms and physiology of all the body systems.
2. Identify the processes and procedures of euthanasia.
3. Determine an animal's body condition score.
4. Evaluate an animal's mucous membrane color and hydration as well as capillary refill time.
5. Demonstrate knowledge of the disease processes of each body system.
6. Demonstrate knowledge of preparing a body for necropsy and disposal of a deceased animal.
7. Demonstrate Knowledge of body system differences between species.
8. Describe isolation procedures and identify when isolation is appropriate.
9. Take the weight and vital signs of an animal and record them in the medical record.
10. Identify the parts of a medical record.
11. Create a medical record for a new patient and file it alphabetically.
12. Take a patient's history and record it in a medical record.
13. Students will be able to maintain accurate lab records, log supplies, and ensure proper organization to support efficient and effective veterinary practices.
14. Follow intake and discharge procedures for a patient using release and discharge forms.
15. Answer the phone in a professional manner, make an appointment, determine an emergency, and schedule accurately.
16. Follow legal requirements for the transfer of a medical record.
17. Schedule an appointment using a computer appointment book.
18. Bill a client for a procedure using veterinary software.
19. Organize and maintain inventory.
20. Prepare a rabies certificate following state regulations.
21. Prepare a health certificate following national regulations.
22. Describe common exam room procedures to a client.
23. Prepare a blood smear and stain it.
24. Prepare a PCV (Packed Cell Volume).
25. Prepare a total protein.
26. Prepare a blood sample for a laboratory.
27. Set up supplies for a serum serology test.
28. Collect a midstream urine sample.
29. Determine physical properties of urine including color and clarity.
30. Assist in the preparation of various specimen staining techniques.
31. Restrain a dog and a cat for a jugular, cephalic, saphenous, and a femoral venipuncture.
32. Apply and remove bandages to healthy animals.
33. Provide care and maintenance of nursing equipment.
34. Set up for fecal floatation.
35. Set up for a fecal smear.

36. Set up for a gross exam of feces.
37. Reconstitute vaccines and demonstrate knowledge of vaccine protocols.
38. Describe possible routes and methods of drug and vaccine administration.
39. Record basic physiological observations in a medical record.
40. Recognize common zoonotic hazards and how to safely handle animals with zoonotic diseases.
41. Monitor and restrain patients for subcutaneous fluid therapy.

170803 Advanced Veterinary Assisting Skills

This course is designed to provide students with in-depth knowledge and hands-on experience in more complex and specialized veterinary procedures. This course builds on foundational skills and equips students with advanced techniques essential for working in a veterinary practice. Students will learn to assist in various clinical, surgical, and diagnostic procedures, with an emphasis on drug administration, radiology, surgical support, and emergency care.

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Differentiate between prescription and over-the-counter pharmaceuticals.
2. Demonstrate knowledge of legal issues involving drugs in the workplace.
3. Recognize general types and groups of drugs.
4. Demonstrate knowledge of pharmaceutical terminology.
5. Interpret a prescription and fill it using proper labeling, terminology, and calculations including expiration dates.
6. Hand pill a dog and a cat.
7. Administer oral liquid medication.
8. Monitor and restrain patients for IV fluid therapy.
9. Apply ear and eye medication.
10. Demonstrate knowledge of small animal nutritional requirements.
11. Prepare food for a patient.
12. Demonstrate knowledge of pet food labeling standards and the differences between pet food products.
13. Demonstrate the basics of animal first aid/CPR.
14. Demonstrate knowledge of safety procedures for work with radiation.
15. Demonstrate knowledge of the use of a radiology log.
16. Set up for a radiograph.
17. Assist with positioning of an animal for a radiograph or an ultrasound.
18. Identify directional terms used in veterinary radiology.
19. Demonstrate knowledge of automatic, manual, and digital film developing techniques.
20. Demonstrate knowledge of proper care for radiology equipment.
21. Label, file, and store film and radiographs.
22. Know safety techniques for handling processing chemicals.
23. Maintain a surgery logbook.
24. Evaluate situations and apply aseptic techniques.
25. Assist in pre-anesthesia, pre-surgical preparation and induction.
26. Assist with the positioning of surgical patients.
27. Clip and prep a surgical site.
28. Provide post-operative care for a surgical patient.
29. Prepare and open sterile cloth and paper wrapped items while maintaining asepsis.
30. Clean surgical instruments.
31. Identify surgical instruments and prepare an instrument pack.
32. Prepare a drape pack, a paper pack, and a gown pack.
33. Use a steam autoclave to sterilize packs.
34. Maintain a steam autoclave.
35. Demonstrate knowledge of gas sterilization techniques.
36. Identify different materials and types of sutures.

37. Explain common surgical procedures.
38. Maintain the surgical suite.
39. Monitor and restrain patients for fluid therapy and record observations.
40. Approximate the age of a dog or cat from its dentition.
41. Approximate the age of a horse from its dentition.
42. Explain or demonstrate how to obtain a blood pressure using a doppler.

170804 Veterinary Assisting Internship

Students will develop problem-solving skills and demonstrate workplace applications of skills with the Veterinary Assisting Internship.

Recommended Grade Level: 12

Recommended Credit: 1

Students will:

1. Demonstrate knowledge of anatomical terms, physiology, and disease processes of the endocrine system.
2. Demonstrate knowledge of anatomical terms, physiology, and disease processes of the reproductive system.
3. Demonstrate knowledge of common veterinary abbreviations and terms.
4. Demonstrate career application of skills and knowledge by completing a veterinary assistant internship in the veterinary industry for a total of 180 hours of contact time.
5. Demonstrate knowledge of the veterinary industry by completing the Level 4 Design Project.

170880 Veterinary Medical Terminology

This course provides students with an overview of Veterinary Medical Terminology through a systemic study of word parts that focuses on fundamental recognition, interpretation and medical terms used in effective clinical communication. By building a solid foundation in medical terminology specific to the veterinary field students will develop a vocabulary applicable across various body systems.

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Correctly define, spell, and pronounce selected medical terms dealing with anatomical planes and regions, anatomy of major body systems and associated diseases and disorders.
2. Correctly use plural endings for medical terms.
3. Recognize and define the terminology used to describe common surgical and diagnostic procedures.
4. Learn the links between each body system and the root terms.
5. Apply knowledge of root words, prefixes, and suffixes to identify the meaning of novel medical terms.
6. Correctly identify and use common medical abbreviations and pharmacological terms.
7. Arrange word roots, prefixes, and suffixes to form medical terms.
8. Access resources to enhance understanding of medical terms.
9. Identify and use common medical abbreviations.
10. Use medical terminology within a scope of practice to interpret, transcribe, and communicate information, data, and observations.
11. Recognize and define suffixes that denote nouns, adjectives, and singular and plural forms of medical words.
12. Categorize major prefixes in the following groups: position, number, measurement, negation, direction, and other prefixes.

170908 Introduction to Behavioral Health

This foundational course is crafted to equip students with a thorough understanding of how Behavioral Health shapes society, exploring its influence on historical and modern health and wellness trends. It will also allow an insight into the critical aspect of self-care, acknowledging that the nurturing of one's mental health is not only vital for personal well-being but is also indispensable for fostering the overall wellness of individual patients they serve.

Recommended Grade Level: 10 – 12

Recommended Credit: 1

Students will:

1. Discuss how behavioral health can affect physical, social, spiritual and mental health.
2. Discuss the history and advancements of mental and behavioral health, including but not limited to treatment, medications, insurance, employee benefits, etc.
3. Describe the professional roles, responsibilities, and education requirements of behavioral health providers such as psychologists, psychiatrists, psychiatric nurses, licensed mental health practitioners, licensed drug and alcohol counselors, direct care professionals, school psychologists, non-clinical social workers, recreational therapists, etc.
4. Discuss the professional code of ethics among professionals providing behavioral health services.
5. Describe theories and interventions being used in mental and social health, such as (cognitive behavioral therapy (CBT), dialectical behavior therapy (DBT), creative arts therapy (CAT), emotionally focused therapy (EFT), and solution-focused brief therapy (SFBT).
6. Describe informed consent and how it impacts behavioral health. (Consider discussing court-ordered treatment versus voluntary commitment)
7. Review behavioral health treatment options and support groups.
8. Summarize how personal values and experiences influence one's usage of behavioral health services. (e.g., culture, religion, ethnicity, gender)
9. Describe strategies to develop and evaluate personal mindfulness awareness plans.
10. Discuss the importance of healthcare training in behavioral/mental health and determine if there are deficits in Kentucky. (Addictions, bioethics, epidemiology, socioeconomics and technology)
11. Explain advocacy and its application to behavioral health within the community.
12. Discuss stigma concerning mental health.
13. Describe efforts to reduce the stigma of mental health through public education (e.g., Substance Abuse and Mental Health Services Administration)
14. Demonstrate ways to advocate for friends and family members who need support for behavioral health issues.
15. Demonstrate ways to advocate for a positive, respectful school environment that supports pro-social behavior (e.g., handling teasing and bullying and reducing the stigma associated with mental and behavioral health).
16. Analyze the basic principles of ethical behavior (e.g., beneficence, nonmaleficence, justice, autonomy, and fidelity).
17. Explain the essential need for mental health professionals to prioritize their own mental health (create a self-care plan)
18. Promote methods of self-care. Such as exercise, nutrition, relationships, sleep hygiene,

weight control, stress management, personal hygiene, social media safety, and safety with physical activity (bike riding, skateboarding, boating, etc.)(SAMHSA - 8 Dimensions of Wellness - in resources)

19. Define, identify symptoms, and discuss treatments for different disorders such as, but not limited to the following: Anxiety disorders – panic, phobias, obsessive-compulsive (OCD), generalized anxiety disorder (GAD), post-traumatic stress disorder (PTSD), treatment options – CPT, Substance Use – alcohol and drugs – tolerance, addiction, relapse, detoxification, or withdrawal, Eating disorders.
20. Discuss and provide examples of defense mechanisms (denial, distortion, repression, projection).
21. Recognize appropriate communication with physicians, counselors, therapists, administrators, other healthcare professionals, patients, and families, such as verbal, nonverbal, active listening, silence, summarizing, charting (SOAP) etc.
22. Recognize common barriers to communication and how to handle these barriers, such as but not limited to aphasia, impaired vision, physical disabilities, hearing loss, and psychological barriers.
23. Consider the role of religion and culture when interacting with patients in a behavioral health setting.
24. Review behavioral health treatment options and support groups.
25. Identify the various types of care facilities, such as inpatient facilities, psychiatric hospitals, substance use recovery, rehabilitation centers, adolescent treatment facilities, dementia units, outpatient facilities, and individual and family counseling.
26. Discuss Patient/client/employee safety /privacy measures, such as but not limited to de-escalation techniques (CPI- Crisis Prevention Institute link: institute.crisisprevention.com), use of restraints (chemical restraints and physical restraints) and HIPPA (patient privacy).
27. Identify signs someone may be suffering from a behavioral health issue or mental health disorder such as a significant or noticeable change in mood or energy level, change of interest in activities, sleep, and appetite, disconnecting from friends/family (isolation), inability to cope with daily norms or stress, failure to understand or connect with people, alcohol or drug abuse, hallucinations, excessive anger or hostility, suicidal tendencies, giving away personal items, change in sex drive, and unexplainable physical ailments.
28. Identify the risk factors for behavioral health disorders such as Brain trauma, Birth trauma, Genetic, Life-altering events, Substance abuse, Environmental, Comorbidities, and dual diagnosis.
29. Discuss the following Mental Health Hotlines
 - a. For emergency help - call 911.
 - b. For suicidal thoughts and behavior - dial 988 for the Suicide & Crisis Lifeline. You can also reach them at 1-800-273-TALK (1-800-273-8255).
 - c. For mental health issues after a disaster - Contact the Disaster Distress Helpline at 1-800-985-5990.
 - d. For veterans experiencing a crisis - Contact the Veterans Crisis Line at 1-800-273-8255 and press one.
 - e. SAMSHA & NIMH National Helpline: 1-800-662-4357
 - f. Mental Health Crisis – TEXT or DIAL 988
 - g. Statewide 833-364-2274 – mobilecrisis@scdmh.org.
30. Identify current behavioral health issues and how they impact society.

170920 Medical Office Procedures

This course provides a working knowledge of the duties required in a medical office. It includes professional and career responsibilities, interpersonal communication, administrative responsibilities, and financial administration.

Recommended Grade Level: 11 – 12

Recommended Credit: 1

Students will:

1. List a variety of career possibilities and areas of specialization in medical office careers.
2. Identify and demonstrate good work habits.
3. Apply personal communication skills and techniques.
4. Define and demonstrate appropriate business appearance and image.
5. Prepare a letter of application and resume.
6. Demonstrate and describe proper telephone techniques.
7. Process incoming and outgoing mail.
8. Schedule patient office appointments, hospital admissions, outpatient surgery, and ancillary testing.
9. Assist patients in completing medical forms.
10. Identify the various health care insurance plans, their coverage, and requirements for billing.
11. Complete forms to release patient information.
12. Maintain office equipment and supplies.
13. Identify medicolegal and ethical responsibilities.
14. Discuss the role of cultural, social, and ethnic diversity affecting health care.
15. Demonstrate an understanding of office safety and ergonomics.
16. Prepare professional reports.
17. Make travel arrangements.
18. Perform bookkeeping tasks, including check writing, bank statement reconciliation, billing, and collection procedures.
19. File records accurately.
20. Discuss the principles of using electronic medical records.
21. Comply with HIPAA (Health Insurance Portability and Accountability Act) rules and regulations.
22. Identify community resources.
23. Identify safety rules applicable to this course and demonstrate appropriate observance of said rules, including but not limited to trip hazards, electrical cords and outlets, evacuation procedures for emergencies (including fire, tornado, bomb threat, and earthquake), lockdown procedures for emergencies, location and contents of first aid kit, and MSDS (Material Safety Data Sheets).
24. Utilize activities of HOSA-Future Health Professionals as an integral component of course content, skills application, and leadership development.
25. Use information technology applications as appropriate to health care specialties.
26. Integrate literacy and numeracy concepts and processes across all curricular units.
27. Demonstrate employability and social skills relevant to health careers.

170922 Medical Administrative Assistant Internship

Internship for CTE (Career and Technical Education) courses provides supervised worksite experience for high school students who have completed courses leading to a career pathway. Internship experiences consist of a combination of classroom instruction and field experiences. Students receiving pay for intern experience are those participating in an experience that is a semester or longer and have an established employee-employer relationship. A non-paid internship affects those students who participate on a short-term basis.

Prerequisites: [170111](#) Principles of Health Science **AND** [170131](#) Medical Terminology **AND** [170141](#) Emergency Procedures

Recommended Grade Level: 12

Recommended Credit: 1

Students will:

1. Demonstrate and practice safe work habits at all times.
2. Gain career awareness and the opportunity to test career choices.
3. Receive work experience related to career interests.
4. Integrate classroom studies with work experience.
5. Receive exposure to facilities and equipment unavailable in a classroom setting.
6. Increase employability potential.

461022 Emergency Medical Technician (EMT)

This basic Emergency Medical Technician Course covers all knowledge aspects of trauma care as outlined by national standards created by federal guidelines, considered to be the responsibility of ambulance operations. Training involves typical anatomy and physiology; patient assessment; care for respiratory and cardiac emergencies; control of bleeding; application of dressing and bandages; treatment for traumatic shock; care of fractures, dislocation, sprains and strains; medical emergencies; emergency childbirth; burns and heat emergencies; environmental emergencies; principles of vehicle rescue; transportation of patients and general operations of ambulance systems.

This pathway requires an agreement with the [Kentucky Board of Emergency Medical Services](#).

Recommended Grade Level: 9 – 12

Recommended Credit: 1

Students will:

1. Identify the human systems, including anatomy and physiology, and an introduction and practice in patient assessment.
2. Identify the basic mechanics of respiration, signs of airway obstruction and respiratory arrest, maintaining an open airway, pulmonary resuscitation, variations for children and infants, and special conditions for the laryngectomies.
3. Identify the basics of circulation, signs and symptoms of cardiac arrest.
4. Demonstrate the procedure of cardiopulmonary resuscitation by one rescuer and two rescuers.
5. Demonstrate the use of airways, suction equipment, resuscitation devices, and airway adjuncts.
6. Describe signs, symptoms, and prevention of shock and treatment of shock.
7. Identify signs of internal and external bleeding and demonstrate procedures of bleeding control.
8. Identify indicators and contra indicators relative to the use of pneumatic anti-shock garments and provide for practice in their application.
9. Identify the physiology of the skin and types of wounds. Demonstrate the care of wounds.
10. Demonstrate and practice the application of dressings and bandages.
11. Identify the anatomy and physiology of musculoskeletal systems and definitions and types of fractures and dislocations.
12. Demonstrate the techniques of care for fractures and dislocations, sprains, and strains.
13. Identify the signs and symptoms of injury to the pelvis and hip and demonstrate emergency care for pelvic and hip injury.
14. Identify anatomy and physiology of the nervous systems; signs and symptoms of spinal fractures; general rules of care for patients with spinal injuries; signs of skull fractures; care for skull brain, face and neck injuries; and practice immobilization using extrication collars and splint devices.
15. Identify functions of the abdomen, genitalia, and chest, including techniques of care for these areas.
16. Describe the signs and symptoms of poisoning, bites, and stings; heart attack; stroke and dyspnea; and the care for medical emergencies relative to these conditions.
17. Describe the signs and symptoms and techniques of care for diabetes, abdominal distress, and substance abuse emergencies, including seizures.

18. Identify relative anatomy, physiology, and emergency care for emergency childbirth.
19. Identify components of assessing the newborn, care for premature infants, and pediatric emergencies.
20. Identify the degree and classification of burns and care for each classification.
21. Recognize and identify hazardous materials and preventive procedures.
22. Identify signs and symptoms and correct techniques for heat emergencies, hypothermia, and water-related emergencies.
23. Describe considerations when dealing with infants, children, elderly, and disadvantaged patients.
24. Identify procedures to deal with abnormal behavior and substance abuse patients.
25. Describe dealing with death and near-death situations as an EMT.
26. Identify, demonstrate, and practice the procedures for lifting and transfer of patients.
27. Identify and practice the principles of patient triage.
28. Identify procedures for patient extrication from vehicles.
29. Identify the components of ambulance operations.
30. Identify the components of reports and documents associated with emergency care.
31. Identify the legal aspects of emergency care.
32. Identify communications processes associated with the operations of an emergency medical services system.
33. Identify communicable disease transmission and the universal precautions associated with bloodborne and airborne diseases.
34. Provide for in-hospital observations and training.
35. Provide field observation of emergency medical care as a member of an ambulance crew.

461023 EMS Training

Training involves typical anatomy and physiology; patient assessment; care for respiratory and cardiac emergencies; control of bleeding, application of dressing and bandages; treatment of traumatic shock; care for fractures, dislocation, sprains, and strains; medical emergencies; emergency childbirth; burns and heat emergencies; environmental emergencies; principles of vehicle rescue; transportation of patient; and general operations of emergency medical services.

This pathway requires an agreement with the [Kentucky Board of Emergency Medical Services](#).

Recommended Grade Level: 9 – 12

Recommended Credit: 1 – 6

Students will:

1. Identify the three (3) major roles and responsibilities of the first responder.
2. Describe the legal aspects of providing emergency care.
3. Identify the human systems, including anatomy.
4. Identify the basic mechanics of respiration, signs of airway obstruction and respiratory arrest, maintaining an open airway, pulmonary resuscitation, variations for children and infants, and special consideration for the laryngectomies.
5. Identify the comprise of circulation and signs of cardiac arrest.
6. Demonstrate the procedure of cardiopulmonary resuscitation by one rescuer and two rescuers.
7. Demonstrate the use of airway resuscitator devices and airway adjuncts.
8. Describe signs of shock, prevention of shock, and treatment of shock.
9. Identify signs of internal and external bleeding and demonstrate procedures of bleeding control.
10. Identify the physiology of the skin and classify types of bandages.
11. Demonstrate and practice the application of dressings and bandages.
12. Identify the anatomy and physiology of musculoskeletal systems and definitions and types of fractures and dislocations.
13. Demonstrate the techniques of care for fractures and dislocations, sprains, and strains.
14. Identify the signs and symptoms of injury to the pelvis and hip and demonstrate the emergency care of pelvic and hip injury.
15. Identify anatomy and physiology of the nervous system; signs and symptoms of spinal fractures; general rules of care for patients with spinal injuries; signs of skull fractures; care for skull, brain, face and neck injuries; and practice immobilization using extrication collars.
16. Identify functions of the abdomen, genitalia, and chest, including techniques of care for these areas.
17. Describe the signs and symptoms of poisoning, bites, and medical emergencies relative to these conditions.
18. Describe the signs and symptoms and techniques of care for diabetes, abdominal distress and substance abuse emergencies, including seizures.
19. Identify relative anatomy, physiology, and emergency care for emergency childbirth.
20. Identify the methods to employ for assessing the newborn, caring for premature infants, and pediatric emergencies.
21. Identify the degree and classification of burns and care for each classification.
22. Recognize and identify hazardous materials and preventive procedures.

23. Identify signs and symptoms and care techniques for heat emergencies, hypothermia, and water-related emergencies.
24. Identify procedures to deal with abnormal behavior and substance abuse patients.
25. Describe dealing with death and near-death situations as a first responder.
26. Identify, demonstrate, and practice the procedures for lifting and transferring patients.
27. Identify and practice the principles of patient triage.
28. Identify procedures for patient extrication from vehicles.
29. Identify the components of ambulance operations.
30. Identify the components of reports and documents associated with emergency care.
31. Identify communication processes associated with the operations of an Emergency Medical Services System.
32. Identify communicable disease transmission and the universal precautions associated with bloodborne and airborne pathogens.