

STRANDS AND STANDARDS

MEDICAL ASSISTANT



Course Description

An instructional program that prepares individuals to support physicians by providing assistance during patient examinations, treatment administration and monitoring; by keeping patient and related health record information; and by performing clinical, administrative, and laboratory duties.

Intended Grade Level	12
Units of Credit	2.0
Core Code	36.0.00.00.120
Concurrent Enrollment Core Code	N/A
Prerequisite	None
Skill Certification Test Number	710, 712, 714, 716
Skill Certification Cut Score	710- 76%
	712- 76%
	714- 75%
	716- 77%
Test Weight	1.0
License Area of Concentration	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Medical Assistant

MEDICAL TERMINOLOGY-Benchmark 1

STRAND 1

Students will interpret and apply medical terminology.

Standard 1

Identify the basic structure of medical word associated with Medical Assisting.

- Recognize word construction and dissection.
- Apply word building and definitions.
 - Root words
 - Prefixes
 - Suffixes

Standard 2

Identify and utilize anatomical positions, planes, and directional terms.

- Demonstrate what anatomical position is and how it is used to reference body structures.
- Distinguish between the commonly used anatomical planes and recognize their individual views.
 - Sagittal/Midsagittal Plane
 - Frontal/Coronal Plane
 - Transverse/Horizontal Plane
- Apply directional terms to locations on the human body.
 - Superior/Inferior
 - Anterior/Posterior
 - Medial/Lateral
 - Distal/Proximal
 - Superficial/Deep
 - Ventral/Dorsal
 - Prone/Supine
 - Unilateral/Bilateral

STRAND 2

Students will identify medical abbreviations in a healthcare setting.

Standard 1

Interpret and apply identified medical abbreviations.

- Interpret and extract information from medical documents. Apply medical abbreviations to interpreting and writing prescriptions.
- Apply medical abbreviations to patient charting and other forms of medical communication.

Standard 2

Interpret healthcare/medical symbols.

Strand 2 Performance Skills included below:

MEDICAL OFFICE MANAGEMENT-Benchmark 2

STRAND 1

Students will explore the medical assisting profession and its role in the healthcare setting.

Standard 1

Describe the job responsibilities of a medical assistant.

- Describe the training required for a medical assistant.
 - Compare and contrast endorsed, certified, and registered medical assistants.
 - State
 - National
 - Describe the current Utah medical assistant job training requirements.
- Compare administrative and clinical skills.
 - Administrative skills, including office management and clerical functions.
 - Clinical skills, including therapeutic procedures and diagnostic procedures.

Strand 1 Performance Skills included below:

Standard 2

Analyze characteristics needed for a quality medical assistant and apply the skills necessary for obtaining employment.

- Examine the following workplace skills:
 - Positive attitude
 - Teamwork
 - Adapt to change
 - Communication skills
 - Professional appearance
 - Confidentiality (verbal and written correspondence)
 - Exhibit initiative
 - Integrity
 - Discretion
 - Organize and prioritize
 - Continuing education
 - Critical thinking
 - Dependability
 - Accountability
 - Open to constructive feedback
- Discuss professionalism.
- Apply job-seeking skills.
 - Prepare a resume
 - Write a cover letter
 - Practice job interviewing skills
 - Write a follow-up letter or email
- Identify job opportunities available for Medical Assistants.
 - Ambulatory setting
 - Healthcare departments and specialties

Standard 3

Describe other healthcare professionals with whom medical assistants will work.

- Categorize medical practice specialties. (Examples could include orthopedics, gastroenterology, anesthesiology, etc.)

- Identify ancillary healthcare departments. (Examples could include pharmacy, radiology, laboratory, etc.)

STRAND 2

Students will analyze the legal and ethical issues that impact the medical office.

Standard 1

Identify the legal guidelines/requirements for a medical office.

- Define a medical assistant's scope of practice and understand the principle of delegation.
- Apply risk management procedures.
- Define Health Information Portability and Accountability Act (HIPAA) regulations for the medical office.
- Discuss patient self-determination acts.
 - Medical (Durable) Power of Attorney
 - Living will/Advanced directives
 - Anatomical Gift Act (Organ donation)

Standard 2

Define classifications of law

- Discuss criminal law.
- Discuss civil law.
- Torts
 - Battery
 - Assault
 - Libel
 - Slander
 - False imprisonment
 - Defamation
 - Invasion of privacy
- Contracts

Standard 3

Explain malpractice and the terms associated with malpractice litigation.

- Compare and contrast negligence and malpractice.
- Identify malpractice terms.
 - Informed consent
 - Patient rights
 - Good Samaritan Law
 - Statute of Limitations
 - Commission and Omission

Standard 4

Evaluate medical ethics and related issues.

- Differentiate between law, etiquette, and ethics.
- Discuss ethical situations.
- Apply ethical situations in personal and professional practice.

STRAND 3

Students will identify procedures that contribute to a professional and safe medical office environment.

Standard 1

Identify the elements important in the medical office.

- Discuss the environment appropriate to maintain comfort for patients.
 - Aesthetics
 - Temperature
 - Cleanliness
 - Compliance with Americans with Disabilities Act (ADA)
- Describe a professional way of greeting and responding to patients.
 - Explain the process of collecting new and updated information from patients.
 - Describe a professional way of escorting and instructing patients.
- Learn general techniques of how to resolve conflicts with patients.
 - Late appointment
 - Angry patient
 - Talkative patient
 - Missed appointment

Standard 2

Identify the duties of opening and closing the office.

- Discuss steps used in opening the medical office.
- Discuss steps used in closing the medical office.

Strand 3 Performance Skills included below:

STRAND 4

Students will apply effective medical office communication principles in the healthcare setting.

Standard 1

Describe general guidelines for telephone communication.

- Describe the medical assistant's role in the triage of telephone calls.
- Explain the importance of documenting telephone calls.
- Demonstrate professionalism when answering telephone calls.
- Identify the process of obtaining and making referrals.
- Discuss the process of calling in prescription refills.

Standard 2

Describe general guidelines for electronic communication (emails, text reminders, patient portals, telehealth, etc.).

- Describe the medical assistant's role in electronic communications.
- Demonstrate professionalism when utilizing electronic communication tools.

Standard 3

Describe scheduling techniques.

- Utilize a matrix/master schedule.
- Describe different types of scheduling.
 - Double booking
 - Group/Cluster booking

- Open office hours
- Walk-in
- New patient vs. established patient
- Describe how to document a no-show appointment and a cancellation.

STRAND 5

Students will apply effective interpersonal communication principles in a healthcare setting.

Standard 1

Differentiate between verbal and nonverbal communication.

- Describe the importance of body language and gestures during communication.
- Explain the importance of tone of voice, word choice, and silence during communication.
- Identify the parts of a communication model.
 - Sender
 - Receiver
 - Message
 - Feedback

Standard 2

Identify effective listening skills/habits.

- Differentiate between active and passive listening.
- Identify types of questions to elicit patient information.
 - Open-ended questions
 - Restating
 - Reflecting
 - Clarification
 - Leading

Standard 3

Identify communication barriers.

- Describe the following communication barriers:
 - Physical
 - Mental
 - Language or cultural
 - Maturity
 - Age
 - Stress
- Describe the following defense mechanisms.
 - Repression
 - Regression
 - Rationalization
 - Sarcasm
 - Denial
 - Compensation
 - Projection
 - Displacement
 - Physical avoidance
 - Apathy

Standard 4

Contrast sympathy and empathy.

Standard 5

Describe the steps of the grieving process.

- Describe the psychological implications of a disease/injury/illness to a patient.
- Describe the five psychological stages of grieving.
 - Denial
 - Anger
 - Bargaining
 - Depression
 - Acceptance

STRAND 6

Students will accurately maintain medical records.

Standard 1

Identify the contents of a medical record.

- Discuss the standard medical record and various types of reports.
 - Patient's past records
 - History and physical
 - Insurance
 - Office notes
 - Progress notes
 - Pathology results
 - Medication(s) and/or supplements
 - Physician orders
 - Diagnostic reports
 - Laboratory reports
 - Operative reports
 - Consultation reports
- Describe common documentation approaches for medical records.
 - SOAP – Subjective, Objective, Assessment, Plan
 - HPIP – History, Physical, Impression, Plan
- Describe how to initiate a new patient medical record.
 - Paper charting
 - Electronic Medical Record (EMR)

Strand 6 Performance Skills included below:**Standard 2**

Differentiate between subjective and objective information.

Standard 3

Discuss the legalities associated with the medical record.

- Describe how to correct errors in the patient chart.
- Describe how to add information or addendums to the patient chart.
- Explain the importance of documenting all interventions.

STRAND 7

Students will perform bookkeeping and financial functions in a medical office setting.

Standard 1

Differentiate between accounts receivable and accounts payable.

- Define bookkeeping terms.
 - Credit
 - Debit
 - Transaction
 - Adjustment
 - Balance
 - Asset
 - Liability
 - Collections
- Describe the following financial forms.
 - Bank deposit
 - Bank statement
 - Receipt
 - Invoice
 - Day sheet

Strand 7 Performance Skills included below:

Standard 2

Discuss the difference between various methods of payment.

- Differentiate between different types of checks.
 - Personal
 - Third party check (insurance company)
 - Electronic checks (electronic funds transfer)
- Define terms associated with a checking account.
 - Payee
 - Payer
 - Endorsement
- Describe differences between credit cards and debit cards.
- Compare and contrast flexible spending accounts and health savings accounts.

Strand 7 Performance Skills included below:

STRAND 8

Students will perform proper insurance, coding, and billing procedures.

Standard 1

Identify terms associated with medical insurance.

- Define the following terms associated with medical billing.
 - Birthday rule
 - Preauthorization/Precertification
 - Premium
 - Copayment/Coinsurance
 - Deductible

- Explanation of Benefits (EOB)
- Fee Schedule
- Assignment of Benefits
- Define various insurance carriers.
 - Health Maintenance Organizations- HMO
 - Preferred Provider Organizations- PPO
 - Group Insurance
 - Medicare
 - Medicaid
 - Fee for Service
 - Tricare (military and dependents)
 - Workers Compensation
 - Affordable Care Act (ACA)
- Explain the process to prepare a healthcare claim (CMS 1500 form).

Strand 8 Performance Skills included below:

Standard 2

Explain how to determine procedural and diagnostic coding.

- Define the following terms associated with medical coding.
 - CPT codes
 - ICD-10 codes
 - HCPCS codes
 - CMS 1500 form
- Explain the legalities associated with coding and billing in a medical office including fraudulent claims.
 - Upcoding
 - Unbundling

ANATOMY AND PHYSIOLOGY-Benchmark 3

STRAND 1

Students will identify the body cavities and quadrants and the organs they contain.

Standard 1

Locate the body cavities and their organs.

- Cranial: Brain
- Spinal/Vertebral: Spinal cord
- Thoracic: Heart and lungs
- Abdominal: Liver, most of the intestines including the appendix, stomach, gallbladder, spleen, kidneys
- Pelvic: Urinary bladder, internal reproductive organs

Identify the four major abdominal quadrants and the organs in each quadrant.

- Right upper quadrant (RUQ): Liver, gallbladder, right kidney
- Left upper quadrant (LUQ): Stomach, spleen, pancreas, left kidney
- Right lower quadrant (RLQ): Appendix, right ovary
- Left lower quadrant (LLQ): Left ovary

STRAND 2

Students will identify the structures and functions of the cells and tissues.

Standard 1

Identify the six levels of body organization.

- Describe the chemical level.
- Describe the cellular level.
- Describe the tissues.
- Describe the organs.
- Describe the organ systems.
- Describe the organism.

Standard 2

Identify the principal parts of a generalized animal cell and their functions.

- Nucleus
- Cytoplasm
- Organelles
 - Ribosome
 - Endoplasmic Reticulum (smooth, rough)
 - Golgi Complex
 - Lysosome
 - Mitochondria
- Cell membrane

Standard 3

Differentiate between cellular transport mechanisms.

- Describe diffusion.
- Describe osmosis.
- Describe filtration.

Standard 4

Distinguish between the four basic tissue types.

- Contrast the functions of the four tissue types.
 - Epithelial-covering and lining
 - Connective-support and structure
 - Muscular-movement
 - Nervous-interpretation and nerve impulse conduction
- Identify the locations of the four tissue types.
 - Epithelial-skin and mucous membranes
 - Connective-bones, blood, adipose, cartilage
 - Muscular-muscles
 - Nervous-nerves, brain, spinal cord

STRAND 3

Students will describe the anatomy and physiology of the Integumentary System.

Standard 1

Identify the layers of the skin.

- Epidermis

- Dermis
- Subcutaneous

Standard 2

Identify the structures of the dermis.

- Nails
- Sweat (sudoriferous) glands
- Oil (sebaceous) glands
- Hair

Standard 3

Describe the functions of the integumentary system.

- Protection against water loss
- Protection against infection
- Vitamin D production
- Sensory organ
- Absorption of medications
- Excretion of water, salts, and waste
- Temperature regulation
- Protection against UV light

Standard 4

Identify the disorders of the integumentary system.

- Burns
 - 1st degree – superficial
 - 2nd degree – partial thickness
 - 3rd degree – full thickness
- Athlete's foot
- Hives/urticaria
- Herpes
- Melanoma
- Decubitus ulcers
- Warts/verrucae vulgaris
- Pediculosis/lice
- Dermatitis
- Eczema
- Psoriasis
- Ringworm
- Lesion

Standard 5

Describe the signs and symptoms of infection and inflammation

- Recognize redness, swelling, heat, and pain.
- Identify how the inflammation process is initiated.
- Describe the effects of histamine in inflammation.

STRAND 4

Students will describe the anatomy and physiology of the Skeletal System

Standard 1

Identify the functions of the skeletal system.

- Hematopoiesis (blood cell production)
- Structure
- Support
- Muscle attachment and movement
- Mineral storage

Standard 2

Identify the basic bones of the skeleton.

- Cranium (frontal, parietal, occipital, temporal, maxillae, mandible)
- Vertebrae (cervical, thoracic, lumbar, sacral, coccyx)
- Rib cage (ribs, sternum, xiphoid process)
- Arm (humerus, radius, ulna, carpals, metacarpals, phalanges)
- Pelvis (ilium, ischium, pubis)
- Leg (femur, tibia, fibula, tarsals, metatarsals, phalanges)

Standard 3

Distinguish between the following fractures:

- Simple (closed)
- Compound (open)
- Greenstick
- Impacted (compression)
- Comminuted
- Spiral

Standard 4

Identify the signs and symptoms of disorders of the skeletal system.

- Arthritis (osteoarthritis, rheumatoid arthritis, gouty arthritis)
- Osteoporosis
- Scoliosis, Lordosis, Kyphosis
- Herniated disc
- Carpal tunnel syndrome
- Bursitis
- Sprains

STRAND 5

Students will describe the anatomy and physiology of the Muscular System.

Standard 1

Identify the functions of the muscular system.

- Heat production
- Movement
- Structure
- Protection

Standard 2

Differentiate between the three types of muscle tissue.

- Locate cardiac muscle and describe the characteristics (striated, involuntary, found in the heart.)
- Locate smooth muscle and describe characteristics (non-striated, involuntary, found in hollow organs such as the stomach.)
- Locate skeletal muscle and describe the characteristics (striated, voluntary, found attached to bones.)

Standard 3

Contrast the differences between tendons and ligaments.

- Tendons-connect muscles to bones
- Ligaments-connect bone to bone

Standard 4

Identify the basic muscles of the human body.

- Sternocleidomastoid
- Latissimus dorsi
- Biceps brachii
- Triceps brachii
- Deltoid
- Gluteus (maximus, medius)
- Rectus femoris
- Vastus lateralis
- Gastrocnemius
- Diaphragm

Standard 5

Identify the signs and symptoms of disorders of the muscular system.

- Strains
- Atrophy
- Tendonitis
- Fibromyalgia
- Muscular Dystrophy

STRAND 6

Students will describe the anatomy and physiology of the Cardiovascular System.

Standard 1

Identify the components of the cardiovascular system.

- Blood
- Heart
- Blood vessels
 - Arteries
 - Veins
 - Capillaries

Standard 2

Identify the functions of the cardiovascular system.

- Transportation of nutrients and wastes
- Transportation of heat

- Transportation of oxygen and carbon dioxide
- Transportation of hormones, antibodies, and enzymes

Standard 3

Identify the structures of the heart.

- Aorta
- Coronary arteries
- Septum
- Myocardium
- Inferior and superior vena cava
- Right and left atria
- Tricuspid valve, Bicuspid valve (mitral valve)
- Right and left ventricles
- Pulmonary semilunar valve, aortic semilunar valve
- Pulmonary arteries, pulmonary veins

Standard 4

Locate the major arteries and veins of the cardiovascular system.

- Identify appropriate arteries for taking an accurate blood pressure and pulse.
 - Apical
 - Carotid
 - Radial
 - Brachial
 - Femoral
- Identify appropriate veins for venipunctures.
 - Median cubital
 - Basilic
 - Cephalic

Standard 5

Describe the layers of and functions of blood vessels.

- Arteries
 - Take blood away from the heart.
 - Thicker to withstand the pressure from the heart.
- Veins
 - Take blood toward the heart.
 - Modified with valves to prevent backflow of blood.
- Capillaries
 - Gas and nutrient exchange between the blood and body cells.
 - Single layer of cells.

Standard 6

Identify the signs and symptoms of disorders of the cardiovascular system.

- Myocardial infarction
- Cerebrovascular accident (CVA-stroke)
- Hypertension
- Embolus/Thrombus
- Arteriosclerosis, Atherosclerosis
- Cardiac arrest

- Phlebitis
- Arrhythmia
- Congestive heart failure (CHF)
- Aneurysm

STRAND 7

Students will describe the anatomy and physiology of the Lymphatic/Immune System.

Standard 1

List the functions of the lymphatic system.

- Transport excess tissue fluid to the blood vessels.
- Immunity

Standard 2

Describe the functions of the major structures of the immune system.

- Spleen
 - Filters blood
- Tonsils
 - Lymphatic tissue in the pharynx.
 - Helps to remove pathogens from food and air.
- Lymph nodes
 - Masses of lymphatic tissue
 - Filters pathogens from lymph fluid.

Standard 3

Describe the human body's lines of defense against infection.

- Discuss the physical and chemical barriers.
 - Mucous membranes (trap pathogens)
 - Cilia (propels pathogens out of respiratory tract)
 - Coughing and sneezing
 - Hydrochloric acid (stomach)
 - Tears in the eyes (contain bactericidal chemicals)
- Discuss non-specific immunity.
 - Fever
 - Inflammation (WBC's destroy pathogens)
- Discuss specific immunity.
 - Immune response
 - Production of antibodies
- Differentiate between active and passive immunity.
 - Vaccination
 - Delivery of antibodies
 - Through mother
 - Through injection (gamma globulin)

Standard 4

Identify the signs and symptoms of disorders of the lymphatic/immune systems.

- Influenza
- Coronavirus Disease (COVID-19)
- Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS)

- Mononucleosis
- Autoimmune disorders (Lupus)
- Streptococcus Aureus
- Methicillin Resistant Staphylococcus Aureus (MRSA)

STRAND 8

Students will describe the anatomy and physiology of the Respiratory System.

Standard 1

Identify the structures of the respiratory system.

- Nose and nasal cavity
- Pharynx
- Larynx
 - Epiglottis
- Trachea
- Lungs
- Bronchi
- Bronchioles
- Alveoli

Standard 2

Describe the functions of the respiratory system.

- Warm, moisten, and filter air
- Sound production
- Carbon dioxide-oxygen gas exchange

Standard 3

Identify the signs and symptoms of disorders of the respiratory system.

- Asthma
- Tuberculosis (TB)
- Upper respiratory infection (URI)
- Pneumonia
- Respiratory Syncytial Virus (RSV)
- Chronic obstructive pulmonary disease (COPD)
- Bronchitis
- Epistaxis (bloody nose)
- Sleep apnea

Standard 4

Identify the signs and symptoms of respiratory distress.

- Dyspnea (pursed lip breathing)
- Tachypnea
- Wheezing

STRAND 9

Students will describe the anatomy and physiology of the Digestive System.

Standard 1

Describe the functions of the digestive system.

- Ingestion
- Digestion
- Absorption
- Excretion

Standard 2

Identify the structures of the alimentary canal organs and their basic functions.

- Mouth-chemical and mechanical digestion
- Pharynx-passageway
- Esophagus –passageway to stomach
- Stomach-chemical and mechanical digestion
- Small intestine-chemical digestion and nutrient absorption
- Large intestine-absorption of water, collects waste for excretion

Standard 3

Identify the structures of the accessory organs and their basic functions.

- Salivary Glands – produce saliva to breakdown food
- Pancreas – releases digestive enzymes into the small intestine
- Liver – produces bile to breakdown fats
- Gallbladder – storage of bile

Standard 4

Identify the signs and symptoms of disorders of the digestive system.

- Irritable bowel syndrome (IBS)
- Diverticulitis
- Hemorrhoids
- Celiac disease
- Appendicitis
- Hepatitis A & B
- Ulcers
- Hernia
- Colon cancer

STRAND 10

Students will describe the anatomy and physiology of the Nervous System/Special Senses.

Standard 1

Describe the general functions of the nervous system.

- Detects and interprets sensory information
- Voluntary and involuntary integration of the stimulus
- Response to stimulus (movement or secretion)

Standard 2

Differentiate between the central nervous system (CNS) and the peripheral nervous system (PNS).

- CNS
 - Brain
 - Spinal cord
- PNS
 - Peripheral nerves
 - Sympathetic division
 - Parasympathetic division

Standard 3

Identify the structures of the nervous system and their major functions.

- Brain
 - Cerebrum
 - Frontal lobe-personality, reason, speech
 - Parietal lobe-taste, skin sensations
 - Occipital lobe-sight
 - Temporal lobe-hearing, memory
 - Cerebellum-balance and coordination
 - Midbrain-relay station for impulses
 - Brainstem-heart rate and respirations
 - Medulla oblongata
 - Pons
 - Hypothalamus-control of endocrine functions, blood pressure, and temperature regulation
 - Pituitary gland-secretes many hormones
- Spinal cord-reflex center, conduction of nerve impulses
- Cerebrospinal fluid (CSF)-shock absorption and provide nutrients to CNS
- Meninges (dura mater, arachnoid mater, pia mater)-protection of CNS
- Neurons (sensory, motor, and interneuron)-nerves

Standard 4

Identify the signs and symptoms of disorders of the nervous system.

- Alzheimer's disease
- Meningitis
- Headache
- Epilepsy
- Paralysis (hemiplegia, paraplegia, quadriplegia)
- Herpes zoster/shingles
- Multiple sclerosis (MS)
- Sciatica

Standard 5

Identify the principle anatomical structures of the eye.

- Conjunctiva
- Sclera
- Cornea
- Iris
- Pupil
- Lens
- Retina

Standard 6

Identify the principle anatomical structures of the ear.

- Outer ear
 - Auricle
 - Auditory Canal
- Middle ear
 - Tympanic cavity
 - Tympanic membrane
 - Auditory (Eustachian) tube
 - Auditory ossicles
 - Malleus
 - Incus
 - Stapes
- Inner ear
 - Semicircular canals
 - Vestibule
 - Cochlea and Organ of Corti

Standard 7

Explain the following diseases and disorders associated with the eyes and ears.

- Ametropia-abnormal refracted light
 - Myopia
 - Hyperopia
 - Presbyopia
- Cataracts
- Conjunctivitis
- Strabismus
- Glaucoma
- Macular degeneration
- Vertigo
- Tinnitus
- Middle ear infection (Otitis Media)
- Deafness
 - Conductive
 - Sensorineural

STRAND 11

Students will describe the anatomy and physiology of the Endocrine System.

Standard 1

Describe the general functions of the endocrine system.

- Regulates growth, development, and maturation.
- Regulates chemical balance by the production of hormones.

Standard 2

Describe what a hormone is and how it works.

- Chemicals secreted into the blood to have an effect on a target tissue
- Produced by endocrine glands

Standard 3

Describe the major locations, secretions (hormones), and functions of the following glands:

- Pituitary-growth hormone (GH), adrenocorticotrophic hormone (ACTH), thyroid stimulating hormone (TSH), stores oxytocin
- Thyroid-thyroxine
- Pancreas-insulin
- Adrenal-cortisol, adrenaline
- Ovaries-estrogen, progesterone
- Testes-testosterone

Standard 4

Identify the signs and symptoms of disorders of the endocrine system.

- Diabetes mellitus (Types 1 and 2)
- Hypothyroidism/Hyperthyroidism
- Dwarfism/Gigantism

STRAND 12

Students will describe the anatomy and physiology of the Urinary System

Standard 1

Describe the functions of the urinary system.

- Excrete waste and water from the body
- Regulate fluid balance and blood composition

Standard 2

Identify the structures of the urinary system and their major functions.

- Kidneys-filter the blood and form urine
- Ureters-passageway for urine from the kidneys to the bladder
- Bladder-temporary storage of urine
- Urethra-passageway of urine to the outside of the body

Standard 3

Identify the gross anatomy of the kidneys.

- Renal cortex
- Renal medulla
- Renal pyramids
- Renal pelvis
- Renal capsule
- Calyces

Standard 4

Identify the microscopic structures of the nephron.

- Renal corpuscle
 - Glomerulus
 - Glomerular (Bowman's) capsule
- Afferent arteriole
- Efferent arteriole
- Renal tubule
 - Proximal convoluted tubule

- Descending limb
- Nephron loop
- Ascending limb
- Distal convoluted tubule
- Collecting duct
- Peritubular capillaries

Standard 5

Identify the signs and symptoms of disorders of the urinary system.

- Kidney stones
- Cystitis/UTI
- Pyelonephritis
- Incontinence
- Renal failure

STRAND 13

Students will describe the anatomy and physiology of the Reproductive System.

Standard 1

Describe the functions of the reproductive system.

- Production of gametes (egg and sperm) by the gonads
- Produces hormones to help in the maturation process

Standard 2

Identify the structures of the female reproductive system and their major functions.

- Breasts-lactation
- Ovaries-production of eggs, estrogen, and progesterone
- Uterine tubes-site of fertilization, passage between ovaries and uterus
- Uterus-nourishment and protection of the fetus
 - Cervix
 - Endometrium
- Vagina-birth canal, exit for menstrual flow

Standard 3

Identify the structures of the male reproductive system and their major functions.

- Penis-protects the urethra
- Testes-production of testosterone and sperm
- Scrotum-muscular sac containing the testes
- Epididymis-storage and maturation of sperm
- Vas deferens-passageway of semen from the testes (epididymis) to the urethra
- Prostate gland-secretes fluids for sperm motility
- Urethra-passageway for urine and semen

Standard 4

Identify the signs and symptoms of disorders of the reproductive system.

- Female
 - Ovarian cyst
 - Premenstrual syndrome (PMS)
 - Menopause

- Cancer
 - Cervical cancer
 - Ovarian cancer
 - Breast cancer
- Endometriosis
- Human Papillomavirus (HPV)
- Pelvic Inflammatory Disease (PID)
- Male
 - Cancer
 - Prostate cancer
 - Testicular cancer
 - Epididymitis
 - Prostatitis
 - Benign Prostatic Hypertrophy (BPH)

Standard 5

Review the following self-examinations:

- Breast self-exam (BSE)
- Testicular self-exam (TSE)

CLINICAL AND LABORATORY PROCEDURES-Benchmark 4

STRAND 1

Students will examine basic concepts of asepsis.

Standard 1

Describe the infection control cycle.

- Review the five types of microorganisms.
 - Bacteria
 - Virus
 - Protozoa
 - Fungi
 - Rickettsia
- Discuss the chain of infection.

Standard 2

Demonstrate disease prevention principles.

- Describe the three levels of infection control.
 - Sanitization
 - Disinfection
 - Sterilization
- Describe the common standard precautions of infection control.
 - Hand washing/Hand sanitizing
 - Personal protective equipment (PPE)
 - Gloving
 - Masks
 - Gowning
 - Eye protection

- Coughing etiquette
- Hygiene
- Nutrition

Standard 3

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

- List blood-borne pathogens.
 - Hepatitis B and C
 - HIV
- Describe techniques for preventing pathogen transmission.
 - Sharps containers
 - Biohazardous waste containers/bags
- Discuss the use of safety devices.
- Discuss the use of Safety Data Sheets (SDS).
- Discuss the use of incident/injury reports.

Standard 4

Demonstrate procedures for the proper cleaning and care of instruments.

- Sanitizing instruments
- Chemical disinfecting (including bleach)
- Sterilization (autoclaving)

STRAND 2

Students will obtain baseline vital signs information and compare it to normal values.

Standard 1

Measure and obtain the five baseline vital signs and know normal values.

- Temperature
 - tympanic
 - oral
 - temporal
- Pulse (peripheral, apical)
 - rate
 - rhythm
 - volume
- Respiration
 - rate
 - rhythm
 - depth
- Blood pressure
 - standard blood pressure
 - orthostatic blood pressure
- Oxygen saturation

Standard 2

Define terms which describe normal and abnormal vital signs values.

- Bradycardia/Tachycardia
- Hypotension/Hypertension

- Febrile/Afebrile
- Bounding/Thready pulse
- Shallow/Dyspnea/Stridor/Hyperventilation/Wheezing
- Hypoxia

Standard 3

Obtain body measurements for adults.

- Height
- Weight

Standard 4

Obtain body measurements for infants.

- Length
- Weight
- Head circumference (hydrocephalus, microcephaly)
- Chest circumference

Strand 2 Performance Skills included below:

STRAND 3

Students will accurately obtain the patient history and assist with the physical examination.

Standard 1

Demonstrate the ability to obtain an accurate patient history.

- Chief complaint
- Use of open-ended questions to obtain information
- Pain scale
- Document allergies
- Relevant observations or information
- Differentiate between subjective and objective information.

Standard 2

Prepare the patient and the examination room.

- Prepare and clean the examination room.
- Assemble all necessary equipment and supplies.
- Demonstrate patient positioning.
 - Supine
 - Prone
 - Lithotomy (pelvic exam)
 - Dorsal recumbent (abdominal exam)
 - Trendelenburg (shock)
 - Fowler's (respiratory)
 - Sims' (rectal administration)
- Demonstrate draping techniques.
- Assist the practitioner as necessary.
- Disinfect the examination table and replace supplies.

Standard 3

Describe common procedures in medical specialties.

- Prostate exam
- Pap test (smear)
- Snellen eye chart (distance visual acuity)
- Ishihara (color visual acuity)
- Jaeger (near vision acuity)
- Ear wax removal (irrigation)

Standard 4

Assist the patient with ambulatory devices.

- Assist patient from a wheelchair to an exam table and back to the wheelchair utilizing proper/safe body mechanics.
- Instruct patient in using walkers, canes, and crutches.

Strand 3 Performance Skills included below:

STRAND 4

Students will discuss pharmacology principles and demonstrate accurate medication administration.

Standard 1

Classify common medications.

- Antihypertensives
- Antihistamines
- Antidiuretics/Diuretics
- Antitussives
- Antidepressants
- Antianxiety
- Contraception
- Antipyretics
- Analgesics
- Antibiotics
- Laxatives
- Antidiabetic/Hypoglycemic
- Anticoagulants
- Hormones
- Anesthetics
- Anti-inflammatories
- Bronchodilators
- Narcotics

Standard 2

Describe the schedule for controlled substances.

- Schedule I-illegal, not prescribed
- Schedule II-high potential for addiction and abuse
- Schedule III-moderate to low potential for addiction and abuse
- Schedule IV-lower potential for addiction and abuse
- Schedule V-low potential for addiction and abuse

Standard 3

Demonstrate how to find medication information from reputable sources.

Standard 4

Document medication administration.

- Medication record
 - Medication
 - Dosage
 - Site
 - Patient reaction
- Immunization record
 - Lot number/manufacturer
 - Expiration date
 - Injection site

Strand 4 Performance Skills included below:**Standard 5**

Understand principles involved with prescription medication.

- Describe the necessary components of a valid prescription.
- Compare and contrast prescription and over-the-counter medications.
- Explain the appropriate procedure for calling or faxing a prescription to the pharmacy.

Standard 6

Perform accurate dosage calculations.

- Evaluate and simplify numerical expressions containing real numbers using the order of operations.
 - Addition, subtraction, multiplication, division
 - Fractions
 - Decimals
 - Ratios
 - Proportions
 - Metrics
 - Conversions
- Calculate solutions to problems and determine the reasonableness of an answer by relating it to the problem.

Standard 7

Identify the following “rights” of medication administration.

- Right patient
- Right medication
- Right time
- Right route
- Right dosage
- Right technique
- Right documentation

Standard 8

Demonstrate the routes, procedures and the supplies for administering medications.

- Oral, including buccal and sublingual
- Transdermal (topical)
- Intradermal
- Subcutaneous

- Intramuscular
- Ear/Eye drops
- Ointments
- Inhalation
- Epi-pen

Standard 9

Describe the side effects of medications.

- Compare and contrast common side effects with adverse effects.
- Recognize signs and symptoms of anaphylactic shock and describe its treatment.

STRAND 5

Students will demonstrate the ability to assist with minor surgery.

Standard 1

Identify common instruments by name, use, and category.

- Cutting instruments
 - Scissor (bandage, suture)
 - Scalpel
- Grasping and clamping
 - Hemostat
 - Forceps
 - Towel clamp
- Probing and dilating
 - Scope
 - Speculum
 - Punch (biopsy)
- Suture materials
 - Sutures (absorbable, non-absorbable)
 - Suture needles
 - Needle holder
 - Steri-strips
 - Staples
 - Skin glue/dermabond

Standard 2

Prepare the patient for a minor surgical procedure including the instruments and supplies.

- Obtain a patient consent form.
- Explain pre- and post-procedure care and education to the patient.
- Demonstrate a surgical hand wash.
- Demonstrate applying sterile gloves.
- Demonstrate creating a sterile field and opening a sterile pack.
- Describe ways of maintaining the sterile field.
- Demonstrate the ability to assist with procedures, including skin preparation.
- Demonstrate sterile dressing changes.
- Demonstrate suture and staple removal techniques.

Strand 5 Performance Skills included below:

STRAND 6

Students will demonstrate how to use the electrocardiograph machine.

Standard 1

Describe the electrical conduction system of the heart.

- Identify the SA node, AV node, AV bundle, bundle branches, and Purkinje fibers.
- Correlate the “PQRST” waves on an EKG (ECG) with the conduction system of the heart.

Standard 2

Prepare the patient for an EKG (ECG).

- Demonstrate electrode placement for a 12-lead EKG (ECG).
- Identify artifacts and describe ways to prevent them.
- Somatic tremor
- Wandering baseline
- Current (A/C) interference

Strand 6 Performance Skills included below:

Standard 3

Identify other tests used to determine heart function.

- Holter monitor (24-48 hours)
- Stress test
- Event monitor (30 days)

STRAND 7

Students will learn skills necessary to work in a physician’s office laboratory (POL) utilizing Clinical Laboratory Improvement Amendments (CLIA) guidelines.

Standard 1

Describe procedures associated with urinalysis.

- Explain different types of urine collection.
 - Clean-catch midstream
 - Catheterization
 - Random
- Explain the physical characteristics of urine (color, odor, appearance).
- Describe urine pregnancy testing.

Strand 7 Performance Skills included below:

Standard 2

Describe terms and procedures associated with hematology.

- Identify the components of blood and the function of each.
 - White blood cells-fight infection
 - Red blood cells-carry oxygen
 - Platelets-clotting
 - Plasma-liquid portion of the blood
- Differentiate between plasma and serum.

- Describe the normal values for these tests:
 - Hematocrit (37-47% women; 40-54% men)
 - Hemoglobin (12-16 g women; 14-18 g men)
 - WBC count (5,000-10,000)
 - RBC count (4.2 million-6 million)
 - Platelet count (150,000-350,000)
 - ESR (1-13 mm male; 1-20 mm female)
 - Glucose (80-120 mg)
 - A1c (4.0 -5.6 %; age dependent)
 - Total Cholesterol (<200)
- Locate capillary and common venipuncture sites.
- Describe the procedure for hemocult testing (guaiac).
- Describe the procedure for obtaining a newborn screening (NBS).
- Describe common blood tests performed within the clinic.
 - Fasting blood sugar (FBS)
 - Glucose tolerance test (GTT),
 - Blood typing

Strand 7 Performance Skills included below:

Standard 3

Describe terms and procedures associated with microbiology.

- Differentiate between gram positive and gram-negative bacteria.
- Differentiate between culturing bacteria and rapid testing.
- Identify the parts and use of the microscope.

STRAND 8

Students will be able to respond to emergencies.

Standard 1

Learn basic lifesaving skills.

- Adult, child, and infant basic life support (BLS)
- Automated External Defibrillator (AED) training

Standard 2

Learn basic first aid skills.

- Describe how to respond to bleeding, shock, and poisoning emergencies.
- Demonstrate bandaging techniques.

EXTERNSHIP

STRAND 1

Students will successfully complete a clinical externship.

Standard 1

Complete a 160-hour minimum externship.

- Have the clinical site complete student evaluation and return to instructor.
- Discuss student externship evaluation with instructor.

Standard 2

Externship evaluations will indicate satisfactory or higher rating.

STRAND 2

Students will demonstrate professional attributes.

Standard 1

Demonstrate durable/workplace skills.

Standard 2

Externship evaluations will indicate satisfactory or higher rating.

Performance Skills

Benchmark 1-MEDICAL TERMINOLOGY

1. Basic computer skills to generate a patient record.

Benchmark 2-MEDICAL OFFICE MANAGEMENT

2. Oral communication:
 - Demonstrate methods of receiving, placing and recording calls.
 - Answer the office telephone.
 - Receive, evaluate, and record a phone message.
 - Make referrals by phone, schedule appointments by phone.
3. Patient reception:
 - Opening the office and closing the office.
 - Greeting the patient, responding to the patient, escorting and instructing the patient.
4. Office Finance:
 - Prepare a bank deposit.
 - Post a payment to a patient account.
 - Enter patient account information.
5. Insurance: Complete a Centers for Medicare and Medicaid Services (CMS) 1500 insurance claim form.

Benchmark 4-CLINICAL AND LABORATORY PROCEDURES

6. Gather vital signs information.
7. Assist with a physical exam.
8. Perform the following vision test:
 - Snellen eye chart (distance visual acuity)
 - Ishihara (color visual acuity)
 - Jaeger (near vision acuity)
9. Document administration of medication.
10. Using sterile technique, set up a basic minor surgery tray.
11. Demonstrate a surgical hand wash.
12. Demonstrate applying sterile gloves.
13. Demonstrate creating a sterile field and opening a sterile pack.
14. Demonstrate the ability to assist with procedures, including skin preparation.
15. Demonstrate sterile dressing changes.
16. Demonstrate suture and staple removal techniques.
17. Perform a standard 12-lead EKG.
18. Perform a urinalysis.
19. Set up a microscopic urinalysis.

20. Demonstrate a capillary puncture with a sterile lancet/autolet.
21. Simulate venipuncture using vacuum method with multiple tubes.
22. Prepare a specimen for the laboratory.
23. Perform a throat swab.
24. Obtain Cardiopulmonary Resuscitation (CPR)/ Basic Life Support (BLS) certification.

Durable Skills

- Communication
- Problem solving
- Teamwork
- Critical Thinking

Skill Certification Test Points by Strand-test to be revised upon Board approval

Test Name	Test #	Number of Test Points by Standard															Total Points	Total Questions
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
Medical Terminology	710	63	16														79	79
Medical Office Management	712	2	8	1	6	6	7	8	13								51	51
Medical Anatomy/ Physiology	714	1	2	6	11	4	10	4	8	6	7	7	3	6			76	75
Clinical & Lab Procedures	716	10	13	10	17	9	7	13									79	79