



EXAM INFORMATION

Items

80

Points

80

Prerequisites

NONE

Grade Level

11-14

Course Length

ONE SEMESTER

Career Cluster

HEALTH SCIENCE

NCHSE HEALTH SCIENCE BUNDLE

Performance Standards

INCLUDED

Certificate Available

YES

DESCRIPTION

This course 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

EXAM BLUEPRINT

STANDARD

PERCENTAGE OF EXAM

1- Asepsis	13%
2- Vital Signs	18%
3- Patient History & Medical Examination	13%
4- Pharmacology & Medication Administration	23%
5- Minor Surgery	10%
6- Electrocardiograph Machine	7%
7- Physician's Office Laboratory	16%
8- Emergencies (Optional)	



STANDARD I

STUDENTS WILL EXAMINE BASIC CONCEPTS OF ASEPSIS

- Objective 1** Describe the infection control cycle.
1. Review the five types of microorganisms.
 1. Bacteria
 2. Virus
 3. Protozoa
 4. Fungi
 5. Rickettsia
 2. Discuss the chain of infection
- Objective 2** Demonstrate disease prevention principles.
1. Describe the three levels of infection control.
 1. Sanitization
 2. Disinfection
 3. Sterilization
 2. Describe the common standard precautions of infection control.
 1. Hand washing/hand sanitizing
 2. Gloving
 3. Personal protective equipment (PPE)
 4. Coughing etiquette/masks
 5. Hygiene
 6. Nutrition
- Objective 3** Apply personal safety procedures based on OSHA and CDC regulations.
1. List blood-borne pathogens.
 1. Hepatitis B and C
 2. HIV
 2. Describe techniques for preventing pathogen transmission.
 1. Sharps containers
 2. Biohazardous waste
 3. Discuss the use of safety devices.
 4. Discuss the use of Materials Safety Data Sheets (MSDS).
 5. Discuss the use of incident/injury reports.
- Objective 4** Demonstrate procedures for the proper cleaning and sanitizing of instruments.
1. Sanitizing instruments
 2. Chemical disinfecting
 3. Autoclaving

Standard I Performance Evaluation included below (Optional)



STANDARD 2

STUDENTS WILL OBTAIN VITAL SIGN INFORMATION AND COMPARE IT TO NORMAL VALUES

- Objective 1** Measure and obtain the five baseline vital signs.
1. Temperature (tympanic, electronic oral, temporal)
 2. Pulse (rate, rhythm, volume, peripheral, apical)
 3. Respiration (rate, rhythm, depth)
 4. Blood pressure
 5. Oxygen saturation
- Objective 2** Define terms which describe normal and abnormal vital signs values.
1. Bradycardia/tachycardia
 2. Hypotension/hypertension
 3. Febrile/afebrile
 4. Bounding/thready pulse
 5. Shallow/dyspnea/stridor/hyperventilation/wheezing
 6. Hypoxia
- Objective 3** Obtain body measurements for adults.
1. Height
 2. Weight
- Objective 4** Obtain body measurements for infants.
1. Length
 2. Weight
 3. Head circumference
 4. Chest circumference

Standard 2 Performance Evaluation included below (Optional)

STANDARD 3

STUDENTS WILL ACCURATELY OBTAIN THE PATIENT HISTORY AND ASSIST WITH THE PHYSICAL EXAMINATION

- Objective 1** Demonstrate the ability to obtain an accurate patient history.
1. Chief complaint
 2. Use of open-ended questions to obtain information
 3. Pain scale
 4. Document allergies
 5. Relevant observations or information
- Objective 2** Prepare the patient and the examination room.
1. Prepare and clean the examination room properly.
 2. Assemble all necessary equipment and supplies.
 3. Demonstrate patient positioning.
 1. Supine
 2. Prone
 3. Lithotomy (pelvic exam)



4. Dorsal recumbent (abdominal exam)
 5. Trendelenburg (shock)
 6. Fowler's (respiratory)
 7. Semi-Fowler's (respiratory)
 8. Sims' (rectal)
4. Demonstrate draping techniques.
 5. Assist the physician as necessary.
 6. Clean the examination table and replace supplies.

Objective 3 Describe common examinations and procedures in medical specialties.

1. Sigmoidoscopy
2. Prostate exam
3. Pap smear
4. Snellen eye chart (visual acuity)
5. Ishihara (color visual acuity)
6. Jaeger (near vision acuity)
7. Ear wax removal (irrigation)
8. Eye irrigation

Objective 4 Assist the patient with ambulatory devices.

1. Assist patient from a wheelchair to an exam table and back to the wheelchair.
2. Instruct patient in using walkers, canes, and crutches

Standard 3 Performance Evaluation included below (Optional)

STANDARD 4

STUDENTS WILL DISCUSS PHARMACOLOGY PRINCIPLES AND DEMONSTRATE ACCURATE MEDICATION ADMINISTRATION

Objective 1 Classify common medications.

1. Antihypertensives
2. Antihistamines
3. Antidiuretics/diuretics
4. Antitussives
5. Antidepressants
6. Antianxiety
7. Contraception
8. Antipyretics
9. Analgesics
10. Antibiotics
11. Laxatives
12. Anti-diabetic/hypoglycemic
13. Anticoagulants
14. Hormones
15. Anesthetics
16. Anti-inflammatories
17. Bronchodilators
18. Narcotic

Objective 2 Describe the schedule for controlled substances.

1. Schedule I – illegal, not prescribed



2. Schedule II – high potential for addiction and abuse
3. Schedule III – moderate to low potential for addiction and abuse
4. Schedule IV – lower potential for addiction and abuse
5. Schedule V – low potential for addiction and abuse

Objective 3 Demonstrate how to find medication information.

1. Physician’s Desk Reference (PDR)
2. Nursing Drug Reference
3. Internet

Objective 4 Document medication administration.

1. Medication record
2. Dosage
3. Site
4. Patient reaction
5. Immunization record
6. Lot number
7. Expiration date
8. Site

Objective 5 Understand principles involved with prescription medication.

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

Objective 6 Perform accurate dosage calculations.

1. Evaluate and simplify numerical expressions containing real numbers using the order of operations.
 1. Addition, subtraction, multiplication, division
 2. Fractions
 3. Decimals
 4. Ratios
 5. Proportions
 6. Metrics
 7. Conversions
2. Compute solutions to problems and determine the reasonableness of an answer by relating them to the problem.

Objective 7 Identify the following “rights” of medication administration.

1. Right patient
2. Right medication
3. Right time
4. Right route
5. Right dosage

Objective 8 Demonstrate the procedures for administering medications.

1. Oral, including buccal and sublingual
2. Transdermal
3. Intradermal
4. Subcutaneous
5. Intramuscular, including Z track method
6. Ear/eye drops
7. Ointments
8. Inhalation
9. EpiPen



- Objective 9** Describe the side-effects of medications.
1. Compare and contrast common side effects with adverse effects.
 2. Recognize signs and symptoms of anaphylactic shock and describe its treatment.

Standard 4 Performance Evaluation included below (Optional)

STANDARD 5

STUDENTS WILL DEMONSTRATE THE ABILITY TO ASSIST WITH MINOR SURGERY

- Objective 1** Identify common instruments by name, use, and category.
1. Cutting instruments
 1. Scissor (bandage, suture)
 2. Scalpel
 2. Grasping and clamping
 1. Hemostat
 2. Forceps
 3. Towel Clamp
 3. Probing and dilating
 1. Scope
 2. Speculum
 3. Punch (biopsy)
 4. Suture materials
 1. Sutures (absorbable, non-absorbable)
 2. Suture needles
 3. Needle holder
 4. Steri-Strips
 5. Staples
 6. Dermabond
- Objective 2** Prepare the patient and the procedure room.
1. Obtain a patient consent form.
 2. Explain pre- and post- procedure care and education of the patient.
 3. Demonstrate a surgical hand wash.
 4. Demonstrate applying sterile gloves.
 5. Demonstrate creating a sterile field and opening a sterile pack.
 6. Describe ways of maintaining the sterile field.
 7. Demonstrate the ability to assist with procedures, including skin preparation.
 8. Demonstrate sterile dressing changes.
 9. Demonstrate suture and staple removal techniques.

Standard 5 Performance Evaluation included below (Optional)



STANDARD 6

STUDENTS WILL DEMONSTRATE HOW TO USE THE ELECTROCARDIOGRAPH MACHINE

- Objective 1** Describe the electrical conduction system of the heart.
1. Identify the SA node, AV node, AV bundle, bundle branches, and Purkinje fibers.
 2. Correlate the “PQRST” waves on an EKG with the conduction system of the heart.
- Objective 2** Prepare the patient for an EKG.
1. Demonstrate electrode placement and obtain a 12 lead EKG.
 2. Identify artifacts and describe ways to prevent them.
 1. Somatic tremor
 2. Wandering baseline
 3. Current interference
- Objective 3** Identify other tests used to determine heart function.
1. Holter monitor (24-48 hour)
 2. Stress test
 3. Event monitor (30 days)

Standard 6 Performance Evaluation included below (Optional)

STANDARD 7

STUDENTS WILL LEARN SKILLS NECESSARY TO WORK IN A PHYSICIAN'S OFFICE LABORATORY

- Objective 1** Describe procedures associated with urinalysis.
1. Explain different types of urine collection.
 1. Clean-catch midstream
 2. Catheterization
 2. Explain the physical characteristics of urine (color, odor, appearance).
 3. Demonstrate the ability to use a reagent strip to identify abnormalities in urine.
 4. Demonstrate the ability to set up a wet mount for microscopic analysis.
 5. Describe urine pregnancy testing.
- Objective 2** Describe terms and procedures associated with hematology.
1. Identify the components of blood and the function of each.
 2. White blood cells – fight infection
 1. Red blood cells – carry oxygen
 2. Platelets – clotting
 3. Plasma – liquid portion of the blood
 3. Differentiate between plasma and serum.
 4. Describe the normal values for these tests:
 1. Hematocrit (40 – 54% men; 37 – 47% women)
 2. Hemoglobin (14 – 18 g men; 12 – 16 g women)
 3. WBC count (5,000 – 10,000)
 4. RBC count (4.2 million – 6 million)
 5. Platelet count (150,000 – 350,000)



6. Glucose (80 – 120 mg)
7. Total Cholesterol (<200)
5. Locate capillary and common venipuncture sites.
6. Demonstrate a skin puncture with a sterile lancet/autolet.
7. Demonstrate venipuncture using vacuum method with multiple tubes.
8. Perform a microhematocrit and glucose from finger stick.
9. Demonstrate a hemocult (guaiac).
10. Describe the procedure for obtaining a PKU.
11. Describe common blood tests (FBS, GTT, blood typing).

Objective 3 Describe terms and procedures associated with microbiology.

1. Differentiate between gram positive and gram-negative bacteria.
2. Demonstrate the ability to obtain a throat culture specimen.
3. Differentiate between culturing bacteria and rapid testing.
4. Identify the parts of and use of the microscope

Standard 7 Performance Evaluation included below (Optional)

STANDARD 8 (Optional)

STUDENTS WILL RESPOND TO EMERGENCIES

Objective 1 Obtain CPR certification.

1. Adult, child, and infant CPR
2. AED training

Objective 2 Obtain First Aid certification.

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

Standard 8 Performance Evaluation included below (Optional)

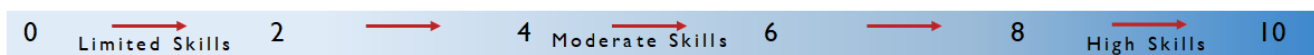


Medical Assistant – Clinical & Laboratory Procedures Performance Standards (Optional)

Performance assessments may be completed and evaluated at any time during the course. The following performance skills are to be used in connection with the associated standards and exam. To pass the performance standard the student must attain a performance standard average of **8 or higher** on the rating scale. Students may be encouraged to repeat the objectives until they average **8 or higher**.

Students Name _____

PERFORMANCE RATING SCALE



Class _____

STANDARD 1 Asepsis

Score:

- Demonstrate concepts of asepsis and sterilization.

STANDARD 2 Vital Signs

Score:

- Vital Signs

STANDARD 3 Patient History & Medical Examination

Score:

- Assisting with physical exam.
- Provide care of special needs.

STANDARD 4 Pharmacology & Medical Administration

Score:

- Pharmacology
- Administration of medications

STANDARD 5 Minor Surgery

Score:

- Assisting with basic minor surgery.

STANDARD 6 Electrocardiograph Machine

Score:

- Obtain a standard 12 lead EKG.

STANDARD 7 Physician's Office Laboratory

Score:

- Demonstrate microscope slide set-up and prepare a specimen for an outside laboratory.
- Urinalysis
- Hematology
- Microbiology and diagnostic testing.



STANDARD 8 Emergencies

Score:

- Obtain CPR and First Aid certification.

PERFORMANCE STANDARD AVERAGE SCORE: