Cerro Coso College

Course Outline of Record Report

10/11/2021

HCRSC139 : Laboratory Procedures

General Information

Author:	-
Course Code (CB01) :	HCRSC139
Course Title (CB02) :	Laboratory Procedures
Department:	Allied Health
Proposal Start:	Fall 2013
TOP Code (CB03) :	(1208.10) Clinical Medical Assisting
SAM Code (CB09) :	Clearly Occupational
Distance Education Approved:	Yes
Course Control Number (CB00) :	CCC000532220
Curriculum Committee Approval Date:	10/04/2013
Board of Trustees Approval Date:	11/14/2013
External Review Approval Date:	02/25/2014
Course Description:	This introductory laboratory course provides basic education and training for a medical assistant in a physician's office laboratory. The focus of the training includes methods of specimen collection; principles of routine office laboratory tests; techniques for blood tests; microbiology office procedures; and blood withdrawal.
Submission Type:	New Course
Author:	No value

Faculty Minimum Qualifications

Master Discipline Preferred:	No value
Alternate Master Discipline Preferred:	No value
Bachelors or Associates Discipline Preferred:	• Health Care Ancillaries (Medical assisting, hospice worker, home care aide, certified nurse aide, health aide, ward clerk, central service technology, childbirth educator, primary care associate, massage therapy)
Additional Bachelors or Associates Discipline Preferred:	No value

Course Development Options

Basic Skills Status (CB08)

Course is not a basic skills course.

☐ Allow Students to Gain Credit by Exam/Challenge

Course Special Class Status (CB13)

Course is not a special class.

Allowed Number of Retakes

0

Grade Options

- Letter Grade Methods

Course Prior To College Level (CB21)

Not applicable.

Rationale For Credit By Exam/Challenge

No value

Retake Policy Description

Type:|Non-Repeatable Credit

☐ Allow Students To Audit Course

Course Support Course Status (CB26)

No value

Associated Programs

☑ Course is part of a program (CB24)

Associated Program	Award Type	Active
CC HCRS Clinical Medical Assisting-	Certificate of Achievement	Spring 2018
CC HCRS Medical Assisting	A.S. Degree Major	Spring 2018

Transferability & Gen. Ed. Options

Course General Education Status (CB25)

No value

Transferability

Not transferable

Transferability Status

Not transferable

Units and Hours

Summary

Minimum Credit Units (CB07)	2
Maximum Credit Units (CB06)	2
Total Course In-Class (Contact) Hours	54
Total Course Out-of-Class Hours	54
Total Student Learning Hours	108
Faculty Load	0

Credit / Non-Credit Options

Course Credit Status (CB04)

Credit - Degree Applicable

Course Non Credit Category (CB22)

Credit Course.

Non-Credit Characteristic

No Value

Course Classification Status (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

Cooperative Work Experience Education Status (CB10)

Variable Credit Course

Weekly Student Hours

	In Class	Out of Classs
Lecture Hours	1.5	3
Laboratory Hours	1.5	0
Activity Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	0
Course In-Class (Contact) Hours	
Lecture	0
Laboratory	0
Activity	0
Total	54
Course Out-of-Class Hours	
Lecture	0
Laboratory	0
Activity	0
Total	54

Time Commitment Notes for Students

No value

Faculty Load

Extra Duties: 0

Faculty Load: 0

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

No Value

Entrance Skills

Entrance Skills	Description
No value	No value

Limitations on Enrollment

Limitations on Enrollment	Description
Requisites	Prerequisite: HCRS C136 Content Review HCRS C136: Clinical Medical Assisting I is a part of the core courses required in the new Administrative Medical Assisting Certificate. Students will need the basic medical procedures, standard precautions, and aseptic technique learned in HCRS C136 to be successful in HCRS C139. or Corequisite: HCRS C136 Content Review HCRS C136: Clinical Medical Assisting I is a part of the core courses required in the new Administrative Medical Assisting Certificate. Students will need the basic medical procedures, standard precautions, and aseptic technique learned in HCRS C136 to be successful in HCRS C139.

Specifications

Methods of Instruction

Methods of Instruction	Presentations (by students)
Rationale	No value
Methods of Instruction	Problem Solving
Rationale	No value
Methods of Instruction	Skills Development and Performance
Rationale	No value
Methods of Instruction	Lecture
Rationale	No value

Methods of Instruction	Demonstration
Rationale	No value
Methods of Instruction	Discussion
Rationale	No value
Methods of Instruction	Group Work
Rationale	No value
Methods of Instruction	Laboratory
Rationale	No value
Methods of Instruction	Audiovisual
Rationale	No value
Methods of Instruction	Case Study
Rationale	No value

Assignments

A. The student will read the assigned text chapters prior to lecture.
B. The student will outline the chapters and incorporating lecture notes with chapter outlines.
C. The student will answer assigned questions from the Medical Assistant Study Guide and other homework assignments.
D. Practice scenario-based physicianâ€™s laboratory procedures.

Methods of Evaluation	Rationale
Other	1. The student will demonstrate laboratory procedures in the skills lab. 2. Student will need to complete each objective successfully. 3. Skills lab participation will be monitored with a Completion Check-off List. 4. Theory applications will be evaluated by Chapter Quizzes, Mid-term and Final, e.g., questions include multiple choice, true-false, and short answer: Question Example: All of the following are guidelines that should be followed when assembling equipment and supplies for a venipuncture except a. Check each blood tube for damage. b. Do not substitute one blood tube for another. c. Check the expiration date of the blood tubes. d. Label each blood tube with one unique patient identifier

Equipment

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
	Bonewit-West, K.. (2012) Clinical Procedures for Medical Assistants, Study Guide, 8th, Saunders/Elsevier			
	Bonewit-West, K.. (2012) Clinical Procedures for Medical Assistants, 8th, Saunders/Elsevier			

Other Instructional Materials

No Value

Materials Fee

No

Learning Outcomes and Objectives

Course Objectives

No value

CSLOs

Discuss the reasons for clinical laboratory testing and purpose of physician office lab (POL). Expected SLO Performance: 70.0

Distinguish the medical assistant's duties from the vocation nurse's duties in a physician's office laboratory. Expected SLO Performance: 70.0

Analyze the regulatory controls under Clinical Laboratory Improvement Amendment (CLIA), which govern procedures completed in the physician's office. Expected SLO Performance: 70.0

Compare and contrast quality control measures to quality assurance programs in a physician's office laboratory. Expected SLO Performance: 70.0

ISLOs Students who are completing a program will be able to think critically and creatively and apply reasoning.
Core ISLOs

Explain the purpose of equipment found in a physician's office laboratory. Expected SLO Performance: 70.0

Discuss and demonstrate accepted techniques for safety rules employed within the physician's office laboratory to prevent accidents and properly dispose of hazardous waste using Standard Precautions. Expected SLO Performance: 70.0

ISLOs Students who are completing a program will be able to access, evaluate, and effectively use information.
Core ISLOs

Demonstrate competency with laboratory procedures including specimen collection and blood withdrawal. Expected SLO Performance: 70.0

Outline

Course Outline

I. Key terms
A. Review the terms listed in the terminology section.
B. Spell the listed terms accurately.
C. Pronounce the terms correctly.
D. Use the terms in their proper context.

II. Clinical laboratory testing
A. Reasons to perform clinical tests
1. Diagnose or rule out disease process
2. Establish treatment plans
3. Monitor treatment plans
B. Purpose of physician office laboratory (POL)
1. Diagnostic testing on site
a. Screening test for diabetes
b. Establish dietary or insulin related treatment plans.
c. Monitor effectiveness of treatment plan using Point of care (POC) glucose monitors.
2. Convenience for patient
3. Cost-effective (managed care)

III. The medical assistant&rsquo:s duties in a physician&rsquo:s office laboratoryMedical assistant duties in POLSpecimen collectionSpecimen processingTest performanceQuality control
i. Logs
ii. Record keeping
iii. Proficiency testing
5. Quality assurance
6. Preventative maintenance
7. Documentation
8. Laboratory safety
i. Chemicals
ii. Physical
iii. Personnel
iv. Patient
9. Hazardous waste disposal
10. Patient education/instruction

IV. Regulatory controls under Clinical Laboratory Improvement Amendment (CLIA)
A. Laboratory regulations for physician office lab
1. CLIA
a. Categories of testing
b. Testing personnel
c. Documentation
d. Proficiency testing
e. Fees
B. State
1. Laws and regulations
2. Inspections
3. Fees
V. Quality control and quality assurance programs
A. Quality control
1. Definition
2. Quality of work
3. Accuracy of testing
4. Documentation/logs

B. Quality control programs
1. Set up
2. Review
C. Documentation
VI. Common reference materials used for the performance standards of a test
A. Performance standards
1. Accuracy
2. Precision
3. Calibration
4. Control samples
5. Relevance
B. Reference materials
1. Package inserts
2. Manufacturer&rsquo:s user guide
3. Clinical laboratory technical procedure manuals
4. OSHA standards
5. CLIA&rsquo:88 requirements
VII. Safety rules; accidents; hazardous waste
A. Standard Precautions
1. Infection control
2. Body surface isolation
B. OSHA Bloodborne Pathogen Standard
C. Hazard Communications Standard
1. Material Safety Data Sheets (MSDS)
2. Biohazard symbol
3. Hazard labels
4. Record keeping
D. Accident Prevention Guidelines
1. Physical safety
2. Fire and electrical safety
3. Biologic safety
4. Sharps safety (no recapping needles)
5. Accident reporting
6. Housekeeping
E. Hazardous Waste Operations and Emergency Response Final Rule
F. Hazardous Waste Disposal (OSHA regulations)
1. What is considered hazardous waste?
2. Proper disposal
a. Chemicals
b. Biohazardous
c. Medical Sharps
3. Proper storage prior to pickup
4. Disposal companies
5. Record keeping
VIII. The composition and function of blood
A. Composition of blood
1. Erythrocytes
2. Leukocytes
3. Thrombocytes
4. Fluid or plasma
B. Production of blood
1. Hematopoiesis
a. Bone marrow
b. Liver
c. Spleen
C. Function of blood
1. Oxygen transportation
a. Hemoglobin
b. Hematocrit
2. Infection control
a. Leukocytes total
b. Lymphocytes
c. Monocytes
d. Neutrophils
e. Eosinophils
f. Basophils
3. Transport chemical components

a. Electrolytes
b. Proteins
c. Glucose
d. Hormones
e. Enzymes
4. Remove waste products
IX. Common fears and concerns of patients
A. Common fears
1. Physical harm/injury
2. Emotional/test results
3. Misunderstanding
B. Reducing fears
1. Explanation of procedure
2. Knowledge of equipment
3. Assessment of patient age; emotional and physical condition
4. Language barriers addressed
5. Professional attitude
6. Compassion
X. Common blood tests and their purpose
A. Common blood tests
1. Complete blood count (CBC)
2. Chemistry panels
a. Glucose
b. BUN
c. Creatinine
d. Proteins
e. Electrolytes
f. Cardiac enzymes
g. Liver enzymes
h. Lipids
3. Tests for hormone levels
XI. The basic characteristics of urine
A. Urine formation
1. Urinary system
2. Organs
3. Filtering process
a. Urine composition 25% water
b. Urine composition 5% organic and inorganic waste products
4. Remaining urine composition
B. Physical properties
1. Color
2. Clarity
3. Odor
4. Specific gravity
C. Chemical properties
1. Albumin (protein)
2. Bacteria (nitrites)
3. Bilirubin
4. Blood (red blood cells; hemoglobin)
5. Blood (white blood cells)
6. Glucose
7. Ketone bodies
8. pH
9. Urobilinogen
10. Specific gravity
D. Formed elements
1. Red blood cells
2. White blood cells
3. Casts
4. Bacteria
5. Crystals
6. Artifacts
E. Purpose
1. To establish and/or rule out disease process.
2. To set up treatment program.

XII. OSHA Standards for Specimen CollectionHand washing

1. When performing clinical procedures; before and after patient contact; before and after applying gloves; and after contact with blood or other potentially infections materials.
2. Gloves no substitute for hand washingBiohazard containers
1. Infectious waste into these containers (closable and clearly marked).
2. Containers leak-proof and properly constructed to contain the contents during handling; transport; or shipping.
3. Urine specimen not qualified for placement into biohazard containers.Clean disposable gloves
1. Worn when in contact with blood and other body fluids that are potentially infectious.
2. Examples: body fluids; mucous membranes; non-intact skin; and contaminated articles or surfaces.Appropriate protective clothing
1. Gown
2. Apron
3. Laboratory coat
4. Face shields or masks in combination with eye protection devices.
a. In case of splashes splatter; or droplets of blood.
b. Other potentially infectious materials
XIII. Maintain the chain of custody when processing urine specimens
A. Chain of custody
1. Specimen documentation form
2. Labels
3. Patient identification
B. Collection procedure
1. Preparation of restroom
2. Collection container
3. Patient instruction
XIV: Microorganisms cause disease
A. Pathogenic organisms
1. Used-up nutrients needed by cells and tissues for survival.
2. Reproduce within cells causing destruction of cells.
3. Body cells become targets of the body&rsquo:s own defense mechanism.
4. Produce toxins which damage cells and tissues.
XV. Viruses; bacteria; fungi; and parasites differ
A. Bacteria
1. Single cell prokaryotic
2. Rapid reproduction Major cause of disease
3. Identified by gram stain
4. Identified by shape
5. Ability to grow in the presence or absence of oxygen
6. Presence of special groups
a. Mycobacteria
b. Rickettsia
c. Chlamydiae
d. Mycoplasms
B. Virus
1. Smallest known infectious organism
2. Not visible with regular microscope
3. Simpler life form than cell
4. Live and grow only within living cells of other organisms.
5. Diseases caused
a. Common cold
b. Influenza
c. Chicken pox
d. Hepatitis
e. Warts
f. AIDS
g. Mumps
h. Rubella
i. Encephalitis
j. Herpes
C. Fungi
1. Eukaryotic organism
2. Single celled organism
3. Budding reproduction (yeast)
4. Large fuzzy multi celled (molds)
5. Cause superficial infections
a. Athlete&rsquo:s feet
b. Ringworm
c. Thrush
d. Vaginal yeast infections

6. Life-threatening illness possible if internal tissue invaded.
D. Parasites
1. Complete organism
2. Existence dependent on another organism for nourishment or some other advantage.
3. Examples of parasitic infections (&ldquo:infestations&rdquo:)
a. Worms
1) Round
2) Flat
3) Tape
b. Insects
1) Mosquitoes
2) Ticks
3) Lice
4) Mites
XVI. Transport specimens to outside laboratories
A. Specimen transportation
1. Follow the collection and packing directions from the laboratory that will receive and test the specimen.
2. Maintain the specimen in a state as close to original as possible.
3. Protect anyone who handles a specimen container from exposure to potentially infectious material.
B. Methods
1. Regularly-scheduled daily pick-ups by the reference laboratory.
2. As-needed pick up
3. Through the mail
a. CDC procedures based on U.S. Public Health Service regulations.
b. Special mailing containers and labels

Lab Outline

I. Procedures for the collection of blood; urine; stool; sputum; throat and other bacteriological specimens
A. Collection procedures/types
1. Venous
a. Evacuated system
b. Syringe
c. Winged infusion sets
2. Capillary
3. Urine
a. Clean catch mid-stream
b. Random
c. 24 hour
d. Performance
1) Observe and record physical characteristics.
2) Perform chemical analysis (Multistix).
3) Record chemical analysis results.
4) Prepare aliquot for centrifugation.
5) Prepare slide with sediment for microscopic examination.
4. Stool / feces
a. Random
b. 24 hour
5. Sputum
a. First morning
b. Random
6. Throat
a. Random
b. Culturette
7. Microbiology (all other)
a. Random
b. Culturette
c. Transport media

II. The purpose of equipment found in a physician&rsquo:s office laboratory
A. Basic equipment
1. Microscope
2. Centrifuge
3. Electronic

a. Photometers
b. Mechanical pipettes
c. Computerized cell counters
4. Equipment used for measurement
a. Glucose meters
b. Hemoglobin meters
c. Microhematocrit readers
5. Autoclave
B. Microscope parts
1. Oculars (eye pieces)
2. Objectives
3. Arm and focus controls
4. Stage and substage
5. Light source
6. Iris
7. Condenser
8. Slides and cover slips
C. Use of microscope
1. Set up
2. Adjusting eye pieces
3. Focusing
4. Slide preparation
5. Viewing the specimen
6. Cleaning
7. Storage

III. Clinical Laboratory Improvement Amendment (CLIA) waived tests
A. Hemoglobin
1. HemoCue
2. Copper sulfate drop
B. Hematocrit
1. Microhematocrit centrifuge
2. Microhematocrit reading device
C. Erythrocyte sedimentation rate (ESR)
1. Wintrobe tube
2. Transfer pipette
3. Timer
D. Blood glucose
1. Glucose meter (many types available)
2. Glucose reagent strips
E. Fecal occult blood
1. Hemoccult slides (other types are available)
2. Developer
F. Dipstick urinalysis
1. Mulitstix 10 SG reagent strips
2. Urinometer
G. Ovulation (visual comparison)
1. Over the counter test kit
2. Package insert
H. Pregnancy (visual comparison)
1. Over the counter test kit
2. Package insert
I. Cholesterol (visual comparison)
1. Over the counter test kit
2. Package insert
J. Rapid strep
1. Throat swab
2. Qtest strep for group A streptococcus
IV. The general guidelines for collection of bodily fluids for microbiological cultures
A. Collection guidelines
1. Collect specimens with care to avoid harm; discomfort or embarrassment to the patient.
2. If a patient is to collect specimen; give clear detailed instructions along with the proper container.
3. Collect a specimen from the area where organism is most likely to be found and contamination is least likely to occur.
4. Collect a specimen at a time when optimal recovery of the organism can be expected.
5. Use appropriate collection devices; specimen containers; transport systems and culture media.
6. Obtain appropriate quantity of specimen necessary to perform the requested procedures.
7. Obtain specimen before antimicrobial therapy begins. If patient is already on antimicrobial therapy; place note in chart.

8. Label the collection container or device.
a. Patient name and ID number
b. Source (collection site of specimen)
c. Date and time of collection
d. Physician name
e. Your first initial and last name
9. Fill out and include the appropriate requisition form.
a. Patient name
b. Patient address
c. Patient date of birth and sex
d. Patient billing information
e. Type and source of microbiological specimen
f. Date and time of specimen collection
g. Test requested
h. Medications patient is taking
i. Diagnosis
j. Physician name; address; and phone number
k. Special instructions

Delivery Methods and Distance Education

Delivery Method: Please list all that apply -Face to face -Online (purely online no face-to-face contact) -Online with some required face-to-face meetings ("Hybrid") -Online course with on ground testing -iTV – Interactive video = Face to face course with significant required activities in a distance modality -Other

Face 2 Face
Hybrid
Interactive

Rigor Statement: Assignments and evaluations should be of the same rigor as those used in the on-ground course. If they are not the same as those noted in the COR on the Methods of Evaluation and out-of-class assignments pages, indicate what the differences are and why they are being used. For instance, if labs, field trips, or site visits are required in the face to face section of this course, how will these requirements be met with the same rigor in the Distance Education section?

No Value

Effective Student-Instructor Contact: Good practice requires both asynchronous and synchronous contact for effective contact. List the methods expected of all instructors teaching the course. -Learning Management System -Discussion Forums -Moodle Message -Other Contact -Chat/Instant Messaging -E-mail -Face-to-face meeting(s) -Newsgroup/Discussion Board -Proctored Exam -Telephone -iTV -Interactive Video -Other (specify)

contact_moodle_forums
contact_moodle_message
contact_chat
contact_email
contact_face2face
contact_phone
contact_itv

Software and Equipment: What additional software or hardware, if any, is required for this course purely because of its delivery mode? How is technical support to be provided?

No Value

Accessibility: Section 508 of the Rehabilitation Act requires access to the Federal government's electronic and information technology. The law covers all types of electronic and information technology in the Federal sector and is not limited to assistive technologies used by people with disabilities. It applies to all Federal agencies when they develop, procure, maintain, or use such technology. Federal agencies must ensure that this technology is accessible to employees and the public to the extent it does not pose an "undue burden". I am using -iTV—Interactive Video only -Learning management system -Publisher course with learning management system interface.

s508_itv
s508_moodle
s508_publisher

Class Size: Good practice is that section size should be no greater in distance ed modes than in regular face-to-face versions of the course. Will the recommended section size be lower than in on-ground sections? If so, explain why.

No Value