

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA



CURRICULUM GUIDE
CERTIFICATE
IN
PHLEBOTOMY



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1. Programme Rationale

As more persons use healthcare facilities and medical care in various formats, the field of healthcare will grow at a rapid rate. According to the U.S. Bureau of Labor Statistics (BLS), the need for phlebotomists is expected to grow largely because doctors and other healthcare professionals will require blood work for analysis and diagnosis. The BLS submits that there were 112 700 jobs in this field in 2014 and projects that from 2014 to 2024 there will be job growth of 25% (www.bls.gov).

The Certificate in Phlebotomy is one of many programmes that will allow CCCJ to add to the cadre of healthcare practitioners in Jamaica's health system. Phlebotomists are a valuable part of a medical team because they help to lessen the workload of doctors and nurses while being crucial players in helping patients to receive accurate and timely diagnoses.

This programme will produce competent, work-ready individuals as it combines hands-on experience and coursework to ensure that students hone necessary cognitive and manipulative skills required to obtain adequate and correct blood specimens by capillary or venepuncture on adults, children and neonates while maintaining the integrity of specimens in relation to tests to be performed.

The CCCJ aims to equip learners with the right tools to impact society and themselves as it provides the best foundation for healthcare practitioners in Jamaica and globally. This organisation seeks to train students to become phlebotomists proficient in communication, leadership, human relations and employability skills to enable them to offer necessary support in the healthcare system.

2. Programme Description

The Certificate in Phlebotomy programme has a duration of one year over two semesters with laboratory sessions and a summer internship. This programme is a dynamic one whereby learners will be exposed to industry practices and experiences as much as possible.

Students will learn how to perform venepuncture in laboratory settings through hands-on coursework and practicum or internship requirements. In addition to phlebotomy skills, students will learn basic medical skills such as cardiopulmonary resuscitation (CPR) as well as safe and efficient work practices through a combination of theory and laboratory activities.

Participants will be prepared to be part of the healthcare team by learning how to extract blood from patients – newborn to geriatric – for diagnostic, blood typing and cross-matching purposes by venepuncture or dermal puncture. Students will not only be exposed to different ways of drawing blood but to standard protocol of handling and transporting specimen samples.

Upon completion of this programme, students will be awarded a ***Certificate in Phlebotomy***.

3. Programme Goals

The Certificate in Phlebotomy programme prepares graduates for the position of phlebotomist in a blood bank, laboratory or any other patient care facility. Graduates shall be capable of functioning in all primary healthcare facilities including private home care.

Learners and graduates will be able to:

1. practise universal safety precautions.
2. maintain patient confidentiality.
3. follow instructions and pay attention to detail.
4. execute accurate record-keeping involving clerical tasks and making computer entries.
5. provide safe and effective care across the lifespan of patients in a variety of healthcare or home-based settings.

6. work collaboratively with members of the healthcare team to provide patient care and manage medical emergencies.
7. apply ethical, legal and professional principles of the healthcare profession.
8. effectively interact with patients, families, members of the healthcare team and other ancillary medical personnel in a therapeutic and professional manner.
9. communicate effectively in writing and orally.
10. display interpersonal skills appropriate for working in patient services.
11. demonstrate professional problem-solving skills in a helping relationship.
12. respect diversity and differences in human relations and services.
13. provide appropriate emotional support.

4. Learning Outcomes

Upon completion of this programme of study, students will gain hands-on experience and learn to:

1. perform skin puncture and venepuncture blood collection ensuring that the proper amount is taken.
2. analyse blood samples by performing chemical, microbiological or other appropriate tests.
3. verify a patient or blood donor's identity.
4. preserve blood samples.
5. label patients' samples accurately.
6. enter patient information accurately into a database.
7. perform basic emergency procedures if dealing with patients with abnormal bleeding or loss of consciousness.
8. assemble medical equipment such as needles, test tubes and blood vials to prevent infections or other complications.
9. maintain medical equipment such as needles, test tubes and blood vials to prevent infections or other complications.
10. keep work areas clean and sanitary.

5. Employment/Career Opportunities

Technical and interpersonal skills acquired in this programme are the basis for an expanding variety of rewarding and challenging careers in healthcare facilities as follows:

- Hospitals
- Health centres
- Medical and diagnostic laboratories
- Doctors' offices
- Outpatient care centres
- Nursing homes
- Long-term care facilities
- Health maintenance organisations
- Public health agencies
- Research institutions

6. Target Groups

This programme targets any of the following:

- Persons with some industry experience but who need formal training
- Mature learners interested in pursuing tertiary education in phlebotomy
- High school graduates who seek certification in the health services

7. Matriculation Requirements

Standard Matriculation

A minimum of three (3) passes in subjects at CSEC or GCE O-Level; English 'A' (CSEC) or English language (GCE), mathematics and a science subject preferably biology or its equivalent.

Alternate Forms of Matriculation

- Equivalent qualification(s) as determined by CCCJ
- Mature status as determined by CCCJ

8. Programme Structure

Certificate in Phlebotomy (Full-Time)

Semester 1

CODE	COURSE	Theory/Practical	CREDITS (HOURS)
COMM1101	Communication I	Theory	3 (45)
PHIP1101	Introduction to Phlebotomy	Theory	3 (45)
NAPH1101	Human Anatomy and Physiology I	Theory (2), Practical	3 (75)
MATH0001	Foundation Concepts in Mathematics I	Theory	3 (45)
PHPT1101	Phlebotomy Equipment, Procedures and Techniques	Theory (2), Practical	3 (75)
ITEC1104	Fundamentals of Information Technology	Theory (2), Practical	3 (75)
Total			18 (360)

Semester 2

CODE	COURSE	Theory/Practical	CREDITS (HOURS)
PSYC1111	Introduction to Psychology I	Theory	3 (45)
PHST1204	Specimen Collection, Preservation and Transportation	Theory (2), Practical	3 (75)
PHWT1201	Waste Disposal and Decontamination Techniques	Theory	3 (45)
PWFA1201	First Aid Procedures/ Cardiopulmonary Resuscitation	Theory (2), Practical	3 (75)
PWVC1201	Vital Signs and Patient Charting	Theory	3 (45)
PWFP1205	Field Practicum I – Clinical Laboratory Procedures	Practical	3 (135)
Total			18 (420)

Summer 1

CODE	COURSE	Theory/Practical	CREDITS (HOURS)
PWMR1301	Medical Ethics and Legal Responsibilities	Theory	3 (45)
PWFP1301	Field Practicum II – Blood Bank/Medical Care Facility	Practical	3 (135)
Total			6 (180)
Programme Total			42 (960)

9. Delivery and Learning Strategies

Methods of delivery or modes of instruction are expected to deliver/facilitate content appropriate to the subject area and learning styles of students to ensure that course objectives are met. Teaching-learning strategies to be employed will incorporate relevant and current technologies and will include, but are not limited to:

Interactive lectures	Observations
Simulations	Presentations
Demonstrations	Laboratory exercises
Project-based learning	Self-directed learning
Field-based learning	Problem-solving
Case studies and analysis	Discussions
Role plays	Guided practise
Research	Guest lectures

Delivery and learning strategies/modes of instruction are intended to:

1. increase the independence of learners.
2. create critical thinkers.
3. equip students to enter the corporate world or start their own businesses.
4. assist learners to:
 - a. develop research skills.
 - b. analyse and evaluate data.
 - c. plan, design and implement projects.

Faculty members or teams will determine for themselves appropriate teaching-learning strategies for each curriculum unit based on intended learning outcomes, needs of learners and availability of resources. All strategies shall encourage progressive development of learners' independent learning skills in all courses.

10. Grading Scheme

Typically, a student's final grade is a combination of coursework and final examination grades. A specific course outline can be consulted regarding the applicable grading scheme.

A student who attains a combined grade of:

- i. 50% or more is deemed to have passed the course.
- ii. 45% to 49% is deemed to have failed the course but qualifies for a supplemental examination¹.
- iii. less than 45% is deemed to have failed the course and will be required to repeat the course in its entirety.

Examination Grades, Points and Distribution (Effective 2014 September)

Percentage Scale	Grade	Grade Point	Student Performance Description
90-100	A	4.00	Excellent
80-89	A-	3.67	
75-79	B+	3.33	Good
70-74	B	3.00	
65-69	B-	2.67	
60-64	C+	2.33	Satisfactory
55-59	C	2.00	
50-54	C-	1.67	

¹The supplemental examination must be done at the next available sitting within the current academic year. The grade received therein shall be the student's final grade for the course. A student who fails a supplemental examination is required to repeat the course in its entirety.

45-49	D+	1.33	Marginal Fail – Resit
40-44	D	1.00	Fail – Redo
0-39	U	0.00	Unsatisfactory

LEVELS OF AWARDS

BACHELOR OF SCIENCE		ASSOCIATE OF ARTS ASSOCIATE OF SCIENCE	
GPA	Classification	GPA	Classification
3.70 - 4.00	First Class Honours	3.70 - 4.00	Honours
3.30 - 3.69	Second Class Honours (Upper)	2.70 - 3.69	Credit
2.70 - 3.29	Second Class Honours (Lower)		
1.70 - 2.69	Pass	1.70 - 2.69	Pass

11. Course/Module Description

Communication I (COMM1101)

This course is designed to develop the community college learner's ability to write expository essays, 'projects' or 'papers' and make oral presentations in varying contexts in and out of the classroom. It is hoped that students will use this course to help them fulfil academic evaluation requirements of courses they will sit at this level and to assist them to become better communicators. Communication I gives learners practise in manipulating secondary sources of information to support their own ideas in writing and speech.

Field Practicum I – Clinical Laboratory Procedures (PWFP1205)

In this course, students will be engaged in a practicum at an affiliated healthcare site under supervision of clinical laboratory professionals. Practical experience will span 135 hours to be completed in all routine areas of a clinical laboratory. Theoretical principles of the clinical laboratory are addressed with emphasis on donor processing, collection, component preparation, testing, problem-solving and various technical functions.

Field Practicum II – Blood Bank/Medical Care Facility (PWFP1301)

Students who have successfully completed all courses will be engaged in a second practicum experience at an affiliated healthcare site under supervision of clinical laboratory professionals. Practical experience will cover 135 hours to be completed in all routine areas of a clinical laboratory. Students will demonstrate the practical aspect of theoretical principles of the clinical laboratory with emphasis on donor processing, collection, component preparation, testing, problem-solving and various technical functions, such as management of quality systems and process control.

First Aid Procedures/Cardiopulmonary Resuscitation (PWFA1201)

This course provides information that will enable students to develop the skill of correctly performing first aid and high-quality CPR in an emergency. Students will learn to recognise when someone needs CPR, how to give effective breaths by mouth to mouth and how to help an infant, child or adult through CPR and by using an automated external defibrillator (AED). Key

steps in first aid will also be covered as well as actions necessary for certain life-threatening medical emergencies such as heart attack, severe bleeding and stroke.

Fundamentals of Information Technology (ITEC1104)

Designed to provide learners with a comprehensive knowledge of the application of computers in different organisations, this course includes a thorough introduction to computers and information technology, information systems, computer networks and systems security. It also aims at equipping learners with practical operating system, word processing, presentation, spreadsheet, database and Internet search technique skills.

Introduction to Phlebotomy (PHIP1101)

Students will be sensitised to demonstrate professional competence and capacity while adapting and delivering quality healthcare in a rapidly changing environment. They will be trained to draw blood from patients in a safe and sanitary manner and to practise proper hand hygiene and donning and removing of personal protective equipment (PPE) when entering and leaving controlled hospital environments.

Introduction to Psychology (PSYC1111)

This course is designed primarily to give students a general understanding and appreciation of human behaviour and its impact on social and business relationships. More specifically, it covers approaches to the study of psychological, biological and developmental bases of behaviour, perception, attitude, motivation, conflict and change and stress management.

Medical Ethics and Legal Responsibility (PWMR1301)

An understanding of the general/fundamental principles of ethical and legal responsibilities in the medical environment will be provided as well as an overview of consequences and ramifications of breaches in policies and laws. Students will be aided in the application of principles to balance ethical dilemma.

Phlebotomy Equipment, Procedures and Techniques (PHPT1101)

Students who have successfully completed Introduction to Phlebotomy (PHIP1101) will receive added theory and practical exposure to develop competence in drawing and handling venous and capillary blood samples using various techniques.

Specimen Collection, Preservation and Transportation (PHST1204)

This course exposes learners to protocols applied in routine collection, preservation and transportation, and preparation of specimens for testing. This exposure will enable them to integrate well into a clinical laboratory team while aiding efficient production of quality results. Students will learn about laboratory design, management and organisation, quality in the clinical laboratory, sterilisation and disinfection, safety in the laboratory and biohazardous materials.

Vital Signs and Patient Charting (PWVC1201)

Students will develop the ability to take vital signs correctly and accurately; temperature, pulse/heart rate, respiration, blood pressure, pain and other important health data such as height, weight, intake and output. They will also learn how to accurately and concisely document findings on patients' charts.

Waste Disposal and Decontamination Techniques (PHWT1201)

This course will examine safe management of waste generated by healthcare facilities, including that produced through the duties of phlebotomy. It will teach students about the types of waste and risks associated with them and provide guidance on how to manage waste through minimising use of, reusing and recycling materials. How to separate, store, transport, treat and dispose of waste produced during delivery of care will be covered in detail.

12. Programme Requirements

Institutions seeking to offer this programme must satisfy minimum programme requirements as indicated in the table below:

NO.	PROGRAMME REQUIREMENTS FOR IMPLEMENTATION
1	Facilities
	Equipped computer laboratory
	Equipped skills training laboratory
	Adequate classroom(s)
	Adequate internet access
	Equipped SEN facilities (with respect to target group)
	Flexible learning options (where possible)
2	Learning/Training Resources
	Curriculum, learner guide, facilitator's manual
	Library materials
	Multimedia content
	Repurposed content for flexible learning
	Repurposed content for SEN
3	Training Equipment
	Materials (e.g. electrical wires)
	Computer software/hardware
	Tools/equipment
	Online simulation resources (if applicable)
	Assistive technologies based on specific SEN
4	Human Resource
	Adequately skilled instructors
	Qualified instructors
	Laboratory assistants (if needed)
	Required number of assessors
	Additional tutors to support flexible learning modality (if required)
	Trained instructor to support selected SEN groups (if necessary)
5	Assessment Strategies to be Approved by Accrediting Body
	Traditional assessment modes
	Blended/flexible assessment modes
	Special education needs
6	Delivery Modality
	Flexible/blended learning (developed content)
	Face to face (developed delivery content)
	SEN modified delivery content
7	Budget
	Delivery costs
	Student/trainee fees
	Other costs

13. References

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COURSE OUTLINES

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME: Communication I Updated May 2016

COURSE CODE: COMM1101

CREDITS: 3

CONTACT HOURS: 45 (theory)

PREREQUISITES: None

COREQUISITES:

SEMESTER: I

COURSE DESCRIPTION

This course is designed to develop learners' ability to write expository essays, projects or papers and make oral presentations in varying contexts in and out of the classroom. It is hoped that this course will be used by learners to help them fulfil academic evaluation requirements of courses they will sit at this level and to become better communicators. Students will get practice in manipulating secondary sources of information to support their own ideas in writing and speech.

REQUIREMENTS FOR THE COURSE

Access to, if not your own computer, the Internet, books, journals, newspapers, magazines, and library membership along with an open mind hungry for knowledge.

COURSE OUTCOMES

Upon successful completion of this course, learners will be able to:

1. demonstrate academic writing skills.
2. manipulate varied credible and reliable sources to present informed and supported points of view.
3. competently create expository essays.
4. competently make oral presentations.
5. employ the APA style in their academic endeavours, writing, presentations, and research.

UNIT I – What is Communication

(8 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. explain communication.
2. identify ways in which selective factors influence the communication process.
3. describe five techniques for effective communication.
4. explain the transactional model of communication.
5. demonstrate efficient note taking using the Cornell method.

Content

1. Definition of communication.
2. The communication process.
3. Factors influencing the communication process: age, sex, culture, family situations, religion, self-concept, education, etc.
4. Barriers to communication (internal/external; semantic and language; physical, psychological, physiological).
5. Effective communication techniques: listening, paraphrasing, direct questioning, clarifying, focusing, silence and other techniques.
6. The Cornell Method: <http://lsc.cornell.edu/wp-content/uploads/2015/10/CornellNote Taking-System.pdf>

UNIT II – Language in the Caribbean Context

(7 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. explain language.
2. discuss historical and social factors that shaped the Caribbean language situation.
3. examine areas of divergence between Creole and Standard English.

Content

1. What is a language?
2. Historical and social factors that affected development of the Caribbean language situation.
3. Comparison of Standard English and Caribbean Creole - lexicon, semantics, phonology, morphology, syntax.

NB. Language used in text messages and its departure from the standard form

UNIT III –Introduction to Oral Presentations

(10 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. describe basic types of oral delivery.
2. make a 3-5 minute oral presentation.
3. use PowerPoint or other visual aid in oral presentations.
4. manage emotional anxiety during oral presentations.

Content

1. Types of delivery:
 - a. Memorised
 - b. Manuscript
 - c. Impromptu
 - d. Extemporaneous
2. Basic visual aids, charts, PowerPoint, models
3. Preparing a basic PowerPoint presentation
4. How to overcome emotional anxiety

UNIT IV –The Writing Process

(20 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. construct a thesis statement.
2. use connectives and transitional devices appropriately.
3. incorporate research materials in the writing process.
4. construct well developed paragraphs.
5. use peer review and editing techniques to review written work.
6. use prewriting and planning strategies.
7. use APA referencing and in-text citation.
8. employ post-writing strategies.

Content

1. Introduction to paragraph development
2. Topic sentences
3. Supporting sentences - details such as examples, illustrations, statistics, facts
4. Concluding sentence/clincher
5. Cohesion, unity, adequacy, and completeness
6. Prewriting Planning, idea generation and research

7. Writing:
APA Referencing:
 - a. Sources of information
 - b. In-text citations
 - c. List of references
 - d. Plagiarism
8. Post-writing: Publishing

METHODS OF ASSESSMENT AND EVALUATION: Continuous Assessment

- | | | |
|----|--|-----|
| 1. | Coursework/Test/Quizzes | 35% |
| 2. | Portfolio: | 50% |
| | a. Bibliography | |
| | b. Formal outline of essay | |
| | c. First draft | |
| | d. Peer review | |
| | e. Final draft | |
| 3. | Individual oral presentation lasting 3-5 minutes | 15% |

RUBRICS

Learner Presentation Rubric

Oral Presentation Rubric v 2 ?	Good	Average	Needs Improvement	Subtotal	Total
Delivery Projection of voice	3	2	1		
Control of Emotional Anxiety Breath control, paralanguage, movement	3	2	1		
Integration of Visual Aid	3	2	1		
Time Management Speech presented within stipulated time	3	2	1		
Content Presentation of a main idea Development of at least 1 point 1 point, 2 subpoints	3	2	1		
Organization Introduction - attention getter, topic, thesis Body - one point adequately developed Conclusion - restate thesis/summation	3	2	1		/15

Review Rubric can be used for stage reviews, peer review of draft essay

Feature	E V G A F P	Comments
Thesis Statement	6 5 4 3 2 1	Main idea, major points
Outline	6 5 4 3 2 1	Logic, planning, format
Sources	6 5 4 3 2 1	Reference page, in-text citation
Paragraphing	6 5 4 3 2 1	Emphasis, coherence, cogency, unity, organization/order
Transitions	6 5 4 3 2 1	Internal summaries, previews, signposts, conjunctions
Introduction	6 5 4 3 2 1	Thesis statement, attention getter, if arg- + opinion
Body	6 5 4 3 2 1	Paragraphs well developed, clear rhetorical organization
Conclusion	6 5 4 3 2 1	No new point, summarise, restate, tie up body and introduction
Tone	6 5 4 3 2 1	Objective-expository, subjective-persuasive
Spelling	6 5 4 3 2 1	
Subject Verb	6 5 4 3 2 1	
Tense	6 5 4 3 2 1	
Punctuation Capitalisation	6 5 4 3 2 1	
Wordiness	6 5 4 3 2 1	
Sentence Construction Parallelism	6 5 4 3 2 1	
Reviewer's Comments		Lecturer's Comments

Expository Grade Breakdown

I. Content

– 10 marks

10 – 9 V Good

Clear development of main points

Rational reasoned coherent presentation of analysis

At least three points must be adequately developed with corresponding supporting points to get full marks.

8- 7 Good

Clear development of main points

Rational reasoned coherent presentation of analysis

Less than three points adequately developed with corresponding supporting points

6-5 Average

Clear development of main points

Rational reasoned coherent presentation of analysis

Less than three points

Points not adequately developed with corresponding supporting points

4-1 Below Average

No development of main points

No supporting point

Incoherent or non-existent analysis

II. Organization

– 8 marks

a) Paragraphing

– 1 mark

- b) Rhetorical strategy – analysis, cause and effect, classification, comparison, definition, illustration - 2 marks

- c) Introduction – contains thesis which includes:

1. 3-5 main points of the essay
2. main idea
3. attention getter - 3 marks

- d) Conclusion

1. Recap, summation, restating
2. No new point - 2 marks

III. Expression/Use of English -7 marks

- a) Academic Grammar, Word Choice, Tone - 2 marks
- b) Punctuation -2 marks
- c) Subject Verb Agreement -2 marks
- d) Connectives -1 mark

ASSIGNMENT ELECTRONIC SUBMISSION

Assignments should use Turnitin software, where applicable. If that is not available, lecturer will give instructions regarding alternate electronic means of submission. As course evaluation is ongoing, students are encouraged, if not required, to send sections of their assignments to the lecturer for review.

Generally speaking, a task is taught one week, and homework is required a minimum of one day before the first class in the next week.

This is so for reasons as follows:

1. Based on submissions the lecturer can tailor or review a section that the class may have misunderstood, for use in the next class.
2. Learner and lecturer can submit assignment and comment at any time convenient to them before the next class.

Electronic submission is recommended because it facilitates advantages named above as well as:

1. It reduces printing costs.
2. It is a record of submission.

NON-SUBMISSION

Please note that if you miss a submission deadline your grades may be lower than a student who consistently makes submission on time as your lecturer may penalize you or refuse to mark the submission. It is recommended that you email your lecturer early to seek permission to submit a stage of an assignment late. Do remember that lecturers are accommodating but it is at their discretion that they allow late submissions.

Be mindful that study is a reality of deadlines and pressure to meet deadlines.

Remember that you have to complete all stages of the course as well as final projects at the level of competence to pass the course.

RESUBMISSION

The course is designed to develop learner competence. Hence, a student is allowed one resubmission if he/she fails a submission or submission is below competence. In such a case, however, a learner's grade for that specific assignment is the average of the two submissions. As the course is competency-based, for a learner to pass, he/she has to demonstrate competence in both stage and final product. That is, all stages of the essay writing process, expository and argument and the presentation-making process as well as in the expository essay, argumentative essay, and presentation.

Required Text

The majority of units will be taught using a variety of material prepared by your lecturer; a website, page url or blog. Some lecturers may recommend chapters or pages in textbooks that best explain specific areas. We recommend that you copy or read these recommended excerpts which usually are available in your college library. An essay writing manual, however, (and there are many, for example A Writers Guide: a handbook for writing and research by Maimon and Perez) will help students immensely. Not only because it provides good information on the essay writing process but because it can be used as a resource for referencing.

Blooming with the Pouis 2009 Ramsay et al, introduction p xxi, Introduction to Argument p 131

Writing in English, 1999, McDonald et al; Chapters 10, 18 -24

The Art of Public Speaking, 2007 Stephen Lucas; Chapters 10,12,13,14.

All texts named above have been referenced in the syllabus guide. They can and should be supplemented, however, by other texts and approaches to topics.

Recommended Texts

Any college essay writing text.

N.B. LEARNERS who FAIL this course are automatically required to REDO.

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	FIELD PRACTICUM I – CLINICAL LABORATORY PROCEDURES
COURSE CODE:	PWFP 1205
CREDITS:	3
CONTACT HOURS:	135 (Practical)
PREREQUISITES:	All Semester I and II courses. Students must also have completed all health data requirements and immunisations (including updated TB test and Hepatitis B immunisation)
COREQUISITES:	None
SEMESTER:	II

COURSE RATIONALE

The purpose of this course is to provide clinical exposure in the laboratory sections of haematology, urinalysis, clinical chemistry, and microbiology in a laboratory/hospital setting. This will allow students to apply knowledge and skills acquired in the classroom to real life experiences in a laboratory setting.

COURSE DESCRIPTION

In this course, students will be engaged in a practicum at an affiliated healthcare site under supervision of clinical laboratory professionals. Practical experience will involve working in all routine areas of a clinical laboratory for 135 hours. Theoretical principles of the clinical laboratory are addressed with emphasis on donor processing, collection, component preparation, testing, problem-solving and various technical functions.

COURSE OUTCOMES

Upon successful completion of this course, learners will be able to:

1. demonstrate proficiency in the clinical objectives of each rotation to which assigned by reviewing basic principles and procedures.
2. demonstrate organisational and technical skills.
3. perform analytical tests on biological specimens, body fluids, cells, and products.
4. monitor QC through understanding of basic laboratory statistics, recognition of affected results and how to take appropriate action.

5. perform preventive and corrective maintenance of equipment and instruments or refer to appropriate sources for repairs.
6. recognise the responsibilities of other laboratory and healthcare personnel and interact with them with respect for their position and patient care.
7. relate laboratory findings to common disease processes.
8. demonstrate professional behaviour by maintaining a strong positive attitude and exhibiting a proactive approach to developing competencies required.
9. use professional judgment in all matters concerning laboratory safety and interaction with patients, specimens, hospital/clinic staff, faculty, and fellow students.
10. maintain a safe laboratory environment by adhering to all applicable safety regulations as presented throughout the medical laboratory technology (MLT) programme which includes appropriate disinfection of work area, maintaining a neat, uncluttered work area, wearing appropriate PPE and reporting observed hazards.

UNIT OBJECTIVES: CLINICAL LABORATORY PROCEDURES

(135 hours)

Haematology

1. Examine QC practices for routine haematology procedures as well as corrective action needed if QC values are outside established limits.
2. Observe the operation of each haematology and coagulation instrument.
3. Explain functions of and blood parameters provided by each haematology and coagulation instrument.
4. Observe differential on a Wright's stained blood smear, correctly identifying all normal and abnormal cells and morphology.
5. Observe body fluid manual cell count.
6. Observe and explain the principle of an erythrocyte sedimentation rate.
7. Evaluate results and explain factors that might interfere with an accurate result.
8. Count reticulocytes after staining.
9. Explain formula and normal values used to correct reticulocyte count for haematocrit.
10. Observe coagulation tests; PT, APTT, thrombin time and explain pathophysiological causes of a prolonged result.

Urinalysis

1. Describe types of urine specimens and diagnostic use of each.
2. Provide guidelines for proper storing, labelling, and handling of urine specimens.
3. Describe collection techniques employed to obtain types of urine specimens.
4. Demonstrate safe techniques in handling and disposing of infectious materials.
5. Correlate urine colour and clarity with substances that can indicate a pathologic process.
6. Describe chemical principles employed to measure substances detected by reagent strips.
7. Relate the significance of positive results for substances detected by reagent strips.
8. Differentiate pathological and nonpathological formed elements detected in urinary sediment.
9. Describe screening techniques used in the urinalysis department to detect metabolic disorders.

Clinical Chemistry

1. Explain proper collection, transportation, and identification of each sample type for chemistry analysis according to fasting state, temperature, speed of analysis, etc.
2. List criteria for rejecting specimens for specific analysis for reasons such as lipemia, haemolysis and prolonged light exposure.
3. Demonstrate accurate laboratory procedure for record-keeping and reporting normal patient results and panic values results.
4. Demonstrate safe techniques for handling and disposing of samples according to laboratory protocol.
5. Evaluate how QC is recorded and corrective measures taken when the QC value falls outside of acceptable limits for chemistry procedures.
6. Identify type of analysis, machine, primary operating components, and function of each component of chemistry instruments used.
7. Perform chemical analysis of each component.
8. Operate each instrument independently following manufacturers' recommendation for instrument performance.
9. Describe chemical tests composing the following profiles and the pathophysiological significance of performing them:
 - a. Electrolyte
 - b. Hepatic

- c. Renal function
- d. Cardiac testing
- e. Diabetes studies (fasting glucose, HbA1c)

Microbiology

1. Explain proper collection, transportation, and identification of microbiology specimens.
2. List criteria for rejecting specimens and corrective action to avoid such specimens.
3. Explain laboratory procedures for record-keeping and reporting significant results.
4. Demonstrate safe techniques for disposing of infectious materials according to laboratory procedure.
5. Correctly interpret results of staining procedures such as gram stain and acid-fast stain.
6. Observe proper inoculation and isolation procedures according to media, temperature, and atmosphere for each type of specimen submitted for microbiological analysis.
7. Observe interpretation and identification of significant isolates from specimens containing normal flora or skin contaminants and specimens from sterile areas using laboratory flow charts and methodology.
8. Observe antibiotic susceptibility testing on pure culture isolates.
9. Observe culture and sensitivity results to a licenced care provider.

Content

Wright's stained blood smear

Reticulocyte count

Erythrocyte sedimentation rate

Testing – cardiac, blood-glucose and pressure, urine

Culturing

Inoculation and isolation procedures

METHODS OF DELIVERY

1. Students will be observed performing various laboratory functions required by the rotation and graded on them by an assigned preceptor. The preceptor will complete the performance evaluation form provided by the programme. Evaluations will be sent to the course instructor for grading. Students will then view and sign evaluations.
2. The preceptor will evaluate students' professionalism and attendance on a scale of 1-10.

3. Students are required to keep daily journals that include time of arrival and departure, brief description of activities performed each day, any observation in the clinical laboratory/hospital and any special situation or critical-thinking/problem-solving opportunity encountered. Journals must be signed off on daily by the site preceptor (verification of hours).
4. At the end of the period, students must present a report. They will answer questions pertaining to areas they worked in during their practicum rotation. Questions, written by the course instructor, will be provided at the beginning of the practicum. Reports will be graded by the course instructor.

METHODS OF ASSESSMENT AND EVALUATION

Preceptor's evaluation	70%
Professionalism and attendance	10%
Journal grade	10%
Clinical course report	10%
Total	100%

RESOURCE MATERIALS

Main Text

McCall, R. E., & Tankersley, C. M. (2015). *Phlebotomy essentials*. 6th ed. Lippincott Williams & Wilkins.

Supplementary Texts

Garza, D., & Becan-McBride, K. (2018). *Phlebotomy handbook: blood collection essential*. 10th ed. New Jersey: Pearson Prentice Hall.

Itatani, C., Shipp, N. (2012). *Phlebotomy best practices: a case study approach*. 1st ed. Philadelphia: Lippincott Williams & Wilkins.

Websites

Ebscohost Databases – <http://www.ebscohost.com>

ProQuest Databases – <http://www.proquest.com>

Springer ebooks – <http://www.springer.com>

CCCJ-OCD/Certificate in Phlebotomy

Version: 1.0

Issue Date: 2022 March 16

PERFORMANCE EVALUATION FORM

PWFP1201: FIELD PRACTICUM I - CLINICAL LABORATORY PROCEDURES

Student's Name _____ Practicum Period _____

EVALUATION

Objective: To provide an overall assessment of student's capabilities in the work environment.

Rating: Above Average 90 - 100
Average 70 - 89
Below Average less than 70

CRITERIA

GRADE

I. TECHNICAL ABILITY AND COMPETENCE

1. Consistently aware of labelling and patient identification _____
2. Aware of and performs all required quality control procedures along with routine procedures with reliability and accuracy _____

II. VOLUME OF WORK

1. Organizes work so that daily workload is not delayed _____
2. Uses initiative in responding to challenges and change _____

III. INDUSTRY

1. Functions appropriately in the laboratory environment _____
2. Establishes sense of being a team player _____

IV. ABILITY TO FOLLOW INSTRUCTIONS

1. Listens to bench instructor/follows instructions without constant repetition _____
2. Reads procedure manual and follows established procedures _____
3. Handles reagents according to specified procedures _____

V. NEATNESS OF WORK

1. Keeps work area and equipment clean _____
2. Replaces reagents and supplies when depleted _____

VI. DEPENDABILITY

1. Punctual _____
2. Works as part of the team _____

VII. SAFETY

Aware of and practices standard laboratory protocols and guidelines _____

GENERAL COMMENT: _____

Signature of Preceptor _____ Date _____

Signature of Student _____ Date _____

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	FIELD PRACTICUM II – BLOOD BANK/MEDICAL CARE FACILITY
COURSE CODE:	PWFP1301
CREDITS:	3
CONTACT HOURS:	135 (Practical)
PREREQUISITES:	All Semester I and II courses. Students must also have completed all health data requirements and immunisations (including updated TB test and Hepatitis B immunisation)
COREQUISITES:	Medical Ethics and Legal Responsibilities (PWMR 1301)
INTERNSHIP:	Summer

COURSE RATIONALE

The purpose of this course is to provide clinical exposure in the laboratory section of a blood bank as well as a hospital setting. This experiential learning will allow students to apply knowledge and skills obtained in the classroom to real-life practical experiences in preparation for immunohaematology and specialized laboratory testing.

COURSE DESCRIPTION

Students who have successfully completed all courses will be engaged in a second practicum experience at an affiliated healthcare site under supervision of clinical laboratory professionals. Practical experience, to be completed in all routine areas of a clinical laboratory, will span 135 hours. Students will demonstrate the practical aspect of theoretical principles of the clinical laboratory with emphasis on donor processing, collection, component preparation, testing, problem-solving and various technical functions such as management of quality systems and process control.

COURSE OUTCOMES

Upon successful completion of this course, learners will be able to:

1. demonstrate proficiency in the clinical objectives of each rotation to which assigned by reviewing basic principles and procedures and openly demonstrating organisational and technical skills.

2. assist in collecting and processing biological specimens and perform analytical tests on body fluids, cells, and products.
3. monitor quality control through understanding basic laboratory statistics, recognising affected results and taking appropriate action.
4. perform preventive and corrective maintenance of equipment and instruments or refer to appropriate sources for repairs.
5. recognise the responsibilities of other laboratory and healthcare personnel and interact with them with respect for their position and patient care.
6. relate laboratory findings to common disease processes.
7. demonstrate professional behaviour by maintaining a strong positive attitude and exhibiting a proactive approach in developing competencies required.
8. use good professional judgment in all matters concerning laboratory safety and interaction with patients, specimens, hospital/clinic staff, faculty, and fellow students.
9. maintain a safe laboratory environment by adhering to all applicable safety regulations as presented throughout the MLT programme which include appropriate disinfection of work area, maintaining a neat, uncluttered work area, wearing appropriate PPE and reporting observed hazards.

UNIT OBJECTIVES: BLOOD BANK/MEDICAL CARE FACILITY (135 practical hours)

1. Demonstrate adherence to proper guidelines for collecting, labelling, and storing blood specimens used in blood bank testing and take necessary action if specimens are unacceptable.
2. Adhere to laboratory policies for record-keeping and reporting, including reading and grading agglutination reactions and haemolysis.
3. Describe Rh system antibodies, including reactivity and characteristics.
4. Name major antigens in blood group systems other than ABO and Rh and the phenotypic frequency.
5. Outline antibodies associated with each blood group system, including clinical significance, Ig classes and serologic characteristics and special reagents used in identification.
6. Compare direct and indirect antiglobulin tests, including their purpose, clinical significance, and procedure.

7. Examine compatible and incompatible crossmatch reactions and necessary steps in the resolution of incompatibilities.
8. Evaluate correct select group specific and non-group specific blood when necessary.
9. List indications and contraindications to transfusion with various blood components.
10. Describe medical history criteria prior to blood collection for protection of both donor and recipient.
11. List the required tests performed on donor blood.
12. Summarise serological/immunological techniques used for infectious disease testing of donor blood.
13. Describe preparation, use, labelling, storage temperature and shelf life.
 - a. Whole blood
 - b. Red blood cells
 - c. Leukocyte-reduced red blood cells
 - d. Saline-washed red blood cells
 - e. Frozen, thawed deglycerolised red blood cells
 - f. Fresh frozen plasma
 - g. Cryoprecipitate
 - h. Platelets
 - i. Granulocytes
14. Describe signs and symptoms of various types of transfusion reactions.
15. State steps to be taken by a blood bank when a transfusion reaction is suspected.
16. Describe types, physiologic effects, and serologic effects of haemolytic disease in newborns (HDN) and antenatal and postnatal tests for detection of HDN.
17. Manage quality control for procedures and instruments in the immunohaematology/immunology laboratory.
18. Outline corrective action for when established limits are exceeded when managing quality control for procedures and instruments in the immunohaematology/immunology laboratory.

Content

1. Instrumentation – immunohaematology.
2. Processing biological specimens and performing analytical tests on body fluids, cells and Products.

3. Collecting, labelling, and storing blood specimens used in blood bank testing.
 - a. Whole blood
 - b. Red blood cells
 - c. Leukocyte-reduced red blood cells
 - d. Saline-washed red blood cells
 - e. Frozen, thawed deglycerolised red blood cells
 - f. Fresh frozen plasma
 - g. Cryoprecipitate
 - h. Platelets
 - i. Granulocytes
4. Antigens in blood group systems other than ABO and Rh and the phenotypic.
5. Haemolytic disease in newborns (HDN) and antenatal and postnatal tests for detection of HDN.

METHODS OF DELIVERY

1. Students will be observed performing various laboratory functions required by the rotation and graded on them by an assigned preceptor. The preceptor will complete the performance evaluation form provided by the programme. Evaluations will be sent to the course instructor for grading. Students will then view and sign evaluations.
2. The preceptor will evaluate students' professionalism and attendance on a scale of 1-10.
3. Students are required to keep daily journals that include time of arrival and departure, brief description of activities performed each day, any observation in the clinical laboratory/hospital and any special situation or critical-thinking/problem-solving opportunity encountered. Journals must be signed off on daily by the site preceptor (verification of hours).
4. At the end of the period, students must present a report. They will answer questions pertaining to areas they worked in during their practicum rotation. Questions, written by the course instructor, will be provided at the beginning of the practicum. Reports will be graded by the course instructor.

METHODS OF ASSESSMENT AND EVALUATION

Preceptor's evaluation	70%
Professionalism and attendance	10%
Journal grade	10%
Clinical course report	10%
Total	100%

RESOURCE MATERIALS

Main Text

McCall, R. E., & Tankersley, C. M. (2015). *Phlebotomy essentials*. 6th ed. Lippincott Williams & Wilkins.

Supplementary Texts

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Itatani, C., & Shipp, N. (2012). *Phlebotomy best practices: a case study approach*. 1st ed. Philadelphia: Lippincott Williams & Wilkins.

Websites

Ebscohost Databases – <http://www.ebscohost.com>

ProQuest Databases – <http://www.proquest.com>

Springer ebooks – <http://www.springer.com>

PERFORMANCE EVALUATION FORM

PWFP1301: FIELD PRACTICUM II – BLOOD BANK/MEDICAL CARE FACILITY

Student's Name _____ Practicum Period _____

EVALUATION

Objective: To provide an overall assessment of student's capabilities in the work environment.

Rating: Above Average 90 - 100
Average 70 - 89
Below Average less than 70

CRITERIA

GRADE

I. TECHNICAL ABILITY AND COMPETENCE

1. Consistently aware of labelling and patient identification _____
2. Aware of and performs all required quality control procedures along with routine procedures with reliability and accuracy _____

II. VOLUME OF WORK

1. Organizes work so that daily workload is not delayed _____
2. Uses initiative in responding to challenges and change _____

III. INDUSTRY

1. Functions appropriately in the laboratory environment _____
2. Establishes sense of being a team player _____

IV. ABILITY TO FOLLOW INSTRUCTIONS

1. Listens to bench instructor/follows instructions without constant repetition _____
2. Reads procedure manual and follows established procedures _____
3. Handles reagents according to specified procedures _____

V. NEATNESS OF WORK

1. Keeps work area and equipment clean _____
2. Replaces reagents and supplies when depleted _____

VI. DEPENDABILITY

1. Punctual _____
2. Works as part of the team _____

VII. SAFETY

Aware of and practices standard laboratory protocols and guidelines _____

GENERAL COMMENT: _____

Signature of Preceptor _____ Date _____

Signature of Student _____ Date _____

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	FIRST AID PROCEDURES/CARDIOPULMONARY RESUSCITATION
COURSE CODE:	PWFA 1201
CREDITS:	3
CONTACT HOURS:	75 (30 Theory, 45 Practical)
PREREQUISITES:	None
COREQUISITES:	None
SEMESTER:	II

COURSE RATIONALE

First aid procedures and cardiopulmonary resuscitation (CPR) are basic life skills that are important for everyone to possess as they can help to save lives in an emergency. These skills are even more critical for healthcare professionals due to the nature of their work. First aid and CPR training and certification are therefore requirements for most healthcare training programmes including phlebotomy.

COURSE DESCRIPTION

This course will provide students with information that will enable them to develop skills needed to correctly perform first aid and high-quality CPR. Students will learn to recognise when someone needs CPR, how to give effective breaths by using mouth to mouth and how to help an infant, child or adult through CPR and by using an automated external defibrillator (AED). Key steps in first aid will be covered as well as first aid actions for certain life-threatening medical emergencies such as heart attack, severe bleeding, and stroke. Students will have ample opportunity to practise skills learnt.

COURSE OUTCOMES

Upon successful completion of this course, students will be able to:

1. list duties, roles, and responsibilities of first aid rescuers.
2. describe the steps in first aid administration and how to protect themselves when performing first aid.
3. evaluate laws that apply to first aid rescuers.

4. perform first aid in situations such as choking in infants, children, and adults.
5. describe how to assess and perform first aid for specific life-threatening medical, injury and environmental emergencies including heart attack, stroke, and allergic reactions.
6. explain how high-quality CPR can improve the chain of survival.
7. recognise when someone needs CPR.
8. perform hands-only CPR.
9. demonstrate how to accurately perform high-quality CPR on infants, children, and adults.
10. demonstrate accurate use of an AED on children and adults.

UNIT I: INTRODUCTION TO FIRST AID

(5 theory + 5 practical hours)

Learner Outcomes

Upon successful completion of the unit, learners will be able to:

1. define duties, roles, and responsibilities of first aid rescuers including the steps before performing first aid.
2. identify steps to take for personal safety when administering first aid.
3. explain legal issues related to first aid.

Content

1. Duties, roles, and responsibilities of first aid rescuers.
 - a. Role in the emergency medical services (EMS) system
 - b. Finding the problem
 - c. Telephoning for help
 - i. When to call
 - ii. How to call
 - d. Following dispatchers' instructions
 - e. First aid kit maintenance
2. Personal safety.
 - a. Assess the scene
 - i. Watch for unsafe places
 - ii. Moving an ill or injured person
 - b. Take universal precautions
 - i. Personal protective equipment

- ii. Proper removal of protective gloves
 - iii. Good hand hygiene
 - iv. Using waterless hand sanitizer
- 3. Legal issues surrounding first aid – Good Samaritan laws

Suggested Practicals

1. Finding the problem in an emergency and responding – assess scene, check for breathing, check if person is responsive, telephone for help, etc.
2. Moving an ill or injured person.
3. Personal safety – removal of protective gloves, hand hygiene, etc.
4. Organizing a first aid kit.

UNIT II: CPR AND AED USE FOR ADULTS

(5 theory + 10 practical hours)

Learner Outcomes

Upon successful completion of the unit, learners will be able to:

1. identify when the person needs CPR.
2. determine the association between adult chain of survival and CPR.
3. demonstrate how to perform high-quality CPR.
4. explain how to use an AED.
5. demonstrate how to use an AED.

Content

1. CPR use for adults
 - a. Adult chain of survival
 - b. Assess and telephone for help
 - i. Follow dispatchers' instructions
 - ii. What to do if unsure
 - c. Perform high-quality CPR
 - i. Open airway
 - ii. Give sets of 30 compressions and 2 breaths
 - iii. Give breaths without pocket mask
 - iv. Pocket masks for giving breaths

- i. Give breaths with pocket mask
 - ii. What to do if chest does not rise
 - iii. Minimize interruptions in chest compressions
- 2. Using an AED
 - a. AED pads
 - b. Special situations
 - i. Hairy chest
 - ii. Water on or near person
 - iii. Implanted pacemaker
 - iv. Medicine patch
 - v. Jewellery or brassiere/undergarment
 - vi. Pregnancy
 - c. Continue providing CPR and using AED

Suggested Practicals

1. Responding to an emergency – assess scene, check for breathing, etc.
2. Performing high-quality CPR (mannequins and/or each other).
3. Performing high-quality CPR on a pregnant woman.
4. Using an AED (mannequins) including special situations such as medicine patch, jewellery, brassiere/undergarment.

UNIT III: CPR AND AED USE FOR CHILDREN AND CPR FOR INFANTS (8 theory + 10 practical hours)

Learner Outcomes

Upon successful completion of the unit, learners will be able to:

1. identify when CPR is needed.
2. determine the association between paediatric chain of survival and CPR.
3. describe how to perform high-quality CPR on infants and children.
4. explain how to use an AED on a child.
5. distinguish among CPR in infants, children, and adults.
6. demonstrate how to perform high-quality CPR.
7. demonstrate the use of AED on infants and children.

Content

1. CPR for children
 - a. Paediatric chain of survival
 - b. Assess and phone for help
 - c. Perform high-quality CPR
 - i. Compression technique
 - ii. Switch rescuers to avoid fatigue
 - iii. Open airway
 - iv. Pocket masks for giving breaths
 - v. Give breaths without pocket mask
 - vi. Give breaths with pocket mask
 - vii. What to do if chest does not rise
 - viii. Minimize interruptions in chest compressions
2. Using AED for children
 - a. AED pads
 - b. Actions to take
 - c. Special situations
 - i. Water on or near child
 - ii. Implanted pacemaker
 - iii. Medicine patch
3. CPR for infants
 - a. Differences in CPR for infants versus CPR for children and adults
 - b. Assess and phone for help
 - c. Perform high-quality CPR
 - i. Compression techniques
 - ii. Switch rescuers to avoid fatigue
 - iii. Open airway
 - iv. Pocket masks for giving breaths
 - v. Give breaths without pocket mask
 - vi. Give breaths with pocket mask
 - vii. What to do if chest does not rise
 - viii. Minimize interruptions in chest compressions
 - ix. Do not delay CPR to get an AED for infants

Suggested Practicals

1. Responding to emergencies – assess scene, check for breathing, etc.
2. Performing high-quality CPR (mannequins and children if possible)
3. Using an AED (mannequins) including special situations such as children with implanted pacemaker.
4. Performing high-quality CPR on an infant (mannequin).

UNIT IV: FIRST AID ADMINISTRATION IN VARIOUS EMERGENCIES (10 theory + 12 practical hours)

Learner Outcomes

Upon successful completion of the unit, learners will be able to:

1. administer first aid to persons experiencing medical emergencies such as breathing problems, allergic reactions and heart attack.
2. administer first aid to individuals experiencing injury emergencies such as external bleeding and head, neck and spine injuries.
3. administer first aid to people experiencing environmental emergencies such as bites, stings and heat-related incidents.

Content

1. Medical emergencies
 - a. Breathing problems
 - i. Signs of breathing problems
 - ii. Using an inhaler
 - b. Choking in an adult, child, or infant
 - i. Mild versus severe airway block
 - ii. Severe airway block in an adult or child
 - iii. Severe airway block in an infant
 - iv. Helping a choking adult, child or infant who becomes unresponsive
 - c. Allergic reactions – epinephrine pen for severe allergic reactions
 - d. Heart attack
 - i. Cardiac arrest versus heart attack
 - ii. Signs of a heart attack

- iii. Signs in women
 - e. Fainting
 - f. Diabetes and low blood sugar
 - g. Stroke
 - i. Warning signs
 - ii. Action
 - h. Seizure
- 2. Injury emergencies
 - a. External bleeding
 - i. Direct pressure and bandaging
 - ii. Tourniquet
 - b. Shock
 - c. Wounds
 - i. Bleeding from the nose
 - ii. Bleeding from the mouth
 - iii. Tooth injuries
 - iv. Eye injuries
 - v. Penetrating and puncturing injuries
 - vi. Amputation
 - vii. Internal bleeding
 - d. Head, neck and spine injuries – concussion
 - e. Broken bones and sprains
 - f. Burns and electrical injuries
- 3. Environmental emergencies
 - a. Bites and stings
 - i. Animal and human bites
 - ii. Snake bites
 - iii. Insect, bee and spider bites and stings
 - iv. Venomous spider bites and scorpion stings
 - v. Tick bites
 - vi. Marine bites and stings
 - b. Heat-related emergencies
 - i. Dehydration

- ii. Heat cramps
 - iii. Heat exhaustion
 - iv. Heat stroke
- c. Cold-related emergencies
 - i. Frostbite
 - ii. Low body temperature (hypothermia)
- d. Poison emergencies

Suggested Practicals

1. Using an inhaler.
2. Helping someone with breathing problems.
3. Performing abdominal thrusts to clear severe airway block in an adult.
4. Performing abdominal thrusts to clear severe airway block in a child.
5. Performing chest thrusts to clear severe airway block in a pregnant woman and large adult or child.
6. Performing back slaps and chest thrusts to clear severe airway block in an infant.
7. Helping a choking adult, child or infant who becomes unresponsive.
8. Using an Epinephrine pen.
9. Identifying someone who is having a stroke, seizure or fainting, heart attack – note signs in men and women.
10. Helping someone who is having stroke, seizure or fainting, heart attack – note signs in men and women.
11. Wrapping wounds – dressing, bandage and tourniquet.
12. Managing cases of injury – eye, tooth, bleeding nose, amputations, broken bones, and sprains (applying splint), etc.

METHODS OF DELIVERY

1. Lectures
2. Presentations
3. Videos
4. Discussions
5. Role play
6. Case studies

7. Project/Research
8. Group work
9. Field trips

METHODS OF ASSESSMENT AND EVALUATION

1. Tests/Quizzes	10%
2. Assignments	10%
3. Class participation	10%
4. Final examination (theory – 2 hours)	30%
5. Practical assessment (8 hours)	40%
Total	100%

Class participation will be evaluated on students' involvement in discussions, role play, case studies and interaction by asking and answering questions.

RESOURCE MATERIALS

Required text

American Heart Association (2021). *2020 Handbook of Emergency Cardiovascular Care for Healthcare Providers* (International English Edition).

Recommended text

Canadian Red Cross. *Comprehensive Guide for First Aid and CPR*. Accessed June 17, 2021.
https://www.alertfirstaid.com/pdf/coursepdf/Comprehensive_Guide_for_FirstAidCPR_en_2.pdf
(PDF attached)

Websites

Ebscohost Databases – <http://www.ebscohost.com>

ProQuest Databases – <http://www.proquest.com>

Springer ebooks – <http://www.springer.com>

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	FUNDAMENTALS OF INFORMATION TECHNOLOGY
COURSE CODE:	ITEC1104
CREDITS:	3
CONTACT HOURS:	75 (30 Theory, 45 Hours Practical)
PRE-REQUISITES:	None
CO-REQUISITES:	None
SEMESTER:	I

COURSE RATIONALE

To expose students to the fundamentals of Information Technology to enable functionality in the workspace which is now heavily reliant on technology.

COURSE DESCRIPTION

This course is designed to provide learners with a comprehensive knowledge of the application of computers in different organisations. It includes a thorough introduction to computers and information technology, information systems, computer networks and systems security. It also aims at equipping learners with practical operating system, word processing, presentation, spreadsheet, database, and Internet search techniques skills.

COURSE OUTCOMES

Upon successful completion of this unit, learners will be able to:

1. understand principles, trends, and ethical implications of information technology.
2. explain various software and their functions.
3. explain data and types of information systems used in the business environment.
4. explain the concepts of database management systems.
5. explain the concepts of data communication and networking.
6. explain computer threats and countermeasures for networked computer systems.

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. define information technology and computer systems.
2. state benefits of information technology.
3. discuss the history of computers.
4. differentiate categories of computers.
5. explain the purpose of components in the system unit.
6. select appropriate input, output and storage devices for a given situation.
7. explain social, legal, ethical and economic implications of information technology.
8. outline health issues relating to the use of technology.
9. discuss emerging technologies.

Content

1. Information technology and computer system definition.
2. Benefits of information technology - speed, consistency, reliability, communication, storage.
3. History: Generations (From the 0th generation (abacus) to the present)
 - a. description of technology used
 - b. features
 - c. time period of invention
 - d. name of inventor
4. Categories Mainframe, Super, Microcomputer (mobile, personal), minicomputer/Midrange
5. Components of the system unit:
 - a. Memory RAM, ROM
 - b. CPU Parts and their functions (ALU, CU, register)
6. Select appropriate input, output and storage devices for a given situation
 - a. Storage devices: magnetic, optical, and flash drive
 - b. Storage: Units of measurement for storage media bit, byte, KB, MB, GB, TB
 - c. Input: Categories keyed (keyboard), pointing (mouse, trackpad, trackball, touchscreen, stylus, light pen), source data entry (scanner, barcode reader, OMR, OCR, MICR), multimedia (microphone, camera), biometric (fingerprint scanner, retinal scanner)
 - d. Output:
 - i. Hard copy/tangible output e.g., impact and non-impact printers

- ii. Soft copy/intangible output e.g., monitors, speakers, projectors
- e. Input/output devices
- f. Multi-functional devices
- 7. Social, legal, ethical, and economic implications of the introduction of computer-based systems on individuals, organisations, and society.
 - a. Social - social networks, netiquette
 - b. Legal - computer crime, identity theft, privacy, plagiarism, copyright infringement, libel
 - c. Ethical - academic integrity, software piracy, pornography, Ten Commandments for Computer Ethics (Computer Ethics Institute of the Brookings Institution)
 - d. Economic - cost of access, virtual companies and taxation, job creation, job loss
- 8. Health issues and the environment
 - a. Ergonomics
 - i. Common health issues e.g., Carpal Tunnel Syndrome
 - ii. Proper posture while using a computer
 - iii. Ergonomic devices e.g., keyboard, mouse
- 9. Emerging technologies (under three years old).

UNIT II - Software

(3 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. define software.
2. distinguish between application software and system software.
3. classify an operating system and a utility programme.
4. list examples of operating systems.
5. list categories of utility programmes.
6. explain the functions of an operating system.
7. discuss emerging technologies (software under three years old).

Content

1. Definition: software.
2. Distinguish: system software, application software.
3. Distinguish: utility and operating system.
4. Examples of operating systems: Unix, MS-Windows, DOS, Linux, Mac OS.
5. Categories utilities file compression, diagnostic, backup, anti-virus, disk cleaner, etc.

6. Functions of an operating system-booting, user interface, resource management, managing memory, file management, task management, etc.
7. Emerging technologies in software development.

UNIT III - Information Systems

(5 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. distinguish between data and information.
2. explain desired characteristics of information.
3. define information systems.
4. describe features of various information systems used at different levels of an enterprise.
5. identify commonly used information systems used by functional units in a typical enterprise.

Content

1. Definition of data and information.
2. Desired characteristics of information: accuracy; clarity, conciseness, user relatedness, relevance, timeliness.
3. Definition of information systems.
4. General systems: definition, level, uses, inputs, outputs
 - a. Management Information System (MIS)
 - b. Expert System (ES)
 - c. Decision Support System (DSS)
 - d. Transaction Processing System (TPS)
 - e. Control and Monitoring System (CMS)
 - f. Executive Information System (EIS)
 - g. Knowledge Management System (KMS)
5. Commonly used information systems for functional units of an enterprise – definition.
 - a. Human Resource
 - b. Accounting/Finance
 - c. Engineering and Product Development
 - d. Sales and Marketing
 - e. Distribution
 - f. Customer Service

UNIT IV - Database Management Systems

(2 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. explain the importance of database management systems (DBMS).

2. describe features common to most DBMS.

Content

1. Importance of Database Management Systems
 - a. Definition of database, DBMS.
 - b. Examples of DBMSes Oracle, MySQL, MS-Access.
 - c. Advantages less redundancy, easier and faster access, improved data integrity, security, availability, extensibility.
 - d. Disadvantages inconsistencies, complexity, breach of confidentiality.
2. Features common to most DBMS
 - a. Table - character, field, data type, record, primary key
 - b. Forms, queries, reports
 - c. Backup

UNIT V - Computer Networks

(7 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. define network.
2. state advantages and disadvantages of networks.
3. describe different types of network classifications.
4. identify the role of basic network hardware required for successful communication.
5. select wired or wireless transmission media for given situations.
6. recommend telecommunication technology(ies) for given situation(s).

Content

1. Definition of networks.
2. Advantages of networks - faster communication, data security, sharing of resources, control of data, resources.
Disadvantages of networks - identity theft, risk of threats (e.g., hackers, viruses), cost.
3. Networks classifications
 - a. Local area networks, metropolitan area networks, wide area networks.
 - b. Role of networks (Internet, intranet, and extranet) in areas of specialisation.
4. Network hardware
 - a. Network interface card, hub, server, router, switch, firewall, wireless access point (WAP), modem.
5. Transmission media - appropriate use in a given situation (advantages disadvantages)
 - a. Wired - twisted pair, coaxial, fibre optic
 - b. Wireless - broadcast radio, cellular radio, microwave, satellite, Bluetooth, Wi-Fi

6. Technology uses - facsimile, voice mail, voice messaging, telemarketing, teleconferencing, video conferencing, telecommuting, electronic funds transfer, ecommerce, electronic mail, cloud computing.

UNIT VI - Computer Security

(4 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. define computer risk and risk management.
2. describe different types of computer risks.
3. apply risk management strategies to counter computer risks.

Content

1. Definition - risk, computer risk, risk management.
2. General risk categories - human error, technical error, viruses, natural disasters, unauthorised access and use, theft and vandalism.
3. Types of risk management - access codes and passwords, audit trails, log systems, anti-virus software, encryption, physical security measures, backup and recovery procedures, firewall, UPS, surge protectors.

Fundamentals of Information Technology (Lab Modules)

ITEC1104

COURSE OUTCOMES

Upon successful completion of this unit, learners will be able to:

1. explain how to prepare business letters, documents and term papers using a formal document preparation style.
2. explain how to use the spreadsheet software to perform various mathematical calculations and conduct analysis on data.
3. show appreciation for presentation software.
4. explain how to use database management software.

UNIT I Word Processing

(13 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. use word processing interface.

2. insert objects into a document.
3. format texts in a document.
4. apply page formatting techniques.
5. use mail merge to create professional documents.
6. use the APA or other writing styles to prepare documents.
7. manipulate data in tables.
8. use word processing templates.
9. print documents created.

Content

1. Interacting with the ribbon (including hiding and displaying ribbon).
2. Inserting Objects: clipart, pictures.
3. Text Formatting:
 - a. Alignment: left, centre, right, justify
 - b. Formatting: bold, italics, underline, subscript, superscript, font sizes and styles
 - c. Copy and paste text, moving text
 - d. Find and replace
 - e. Spacing between paragraphs
 - f. Spell checks
 - g. Indentation
 - h. Use various bullets and numbering techniques (insertion and customisation)

4. Page Formatting:

Page setup, set margins, paper size, page orientation, hard and soft page breaks, arrange data in columns (multiple columns, column width, converting single column to multiple columns, converting multiple columns to single columns, arranging columns for even and odd pages)

5. Creating a professional letter:
 - a. Letter formats
 - b. Mail merging
6. Preparing a term paper (using APA, MLA or any such standard)
 - a. Cover and title page
 - b. Formatting paragraphs: first line indent, paragraph indent, line spacing
 - c. Generating Table of Contents
 - d. Headers and footers (including page numbers)
 - e. Quotations: short and long
 - f. Footnotes
 - g. Creating reference entries
 - h. Citations
7. Tables
 - a. Creating tables, formatting tables: merging cells, splitting cells, shading cells, cell borders
 - b. Formulas: sum, product, max, average, number formats, text direction
8. Templates - business cards, brochures

9. Printing

- a. Choosing a printer, printing single and multiple, selecting print quality, printing multiple copies of a document.

UNIT II - Presentation Graphics

(6 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. create a presentation.
2. run a presentation.
3. modify a presentation.
4. print a presentation.
5. conduct a professional presentation.

Content

1. Creating a presentation/slideshow.
2. Running a presentation.
3. Viewing and editing presentations.
4. Working with slides.
 - a. Inserting new slides
 - b. Inserting duplicates
 - c. Deleting
 - d. Rearranging
 - e. Changing design and background
5. Working with hyperlinks.
 - a. Adding hyperlink
6. Working with graphics/video/sound (audio clips).
7. Working with animation: customised, timing.
8. Printing Presentations.
 - a. Single slides, handouts, notes page

UNIT III - Spreadsheets

(13 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. use spreadsheet interface.
2. apply page formatting techniques.
3. use formulas and functions to analyse data.
4. sort data in ascending and descending order.
5. format data.

6. use a formula to manipulate data located in another worksheet.
7. create and format graphs.
8. print in spreadsheet.

Content

1. Use spreadsheet interface - interacting with ribbon (including hiding and displaying ribbon)
2. Page formatting:
 - a. Default margins, changing margins (left, right, top, bottom)
 - b. Default paper size, changing paper size (letter size, legal size)
 - c. Page orientation
 - d. Add header/footer, custom header/footer
3. Formulas and functions:
 - a. Common mathematical operations:
 - i. Add numbers using simple formula or sum function
 - ii. Calculate average of numbers in a range
 - iii. Determine the smallest number in a range
 - iv. Determine the largest number in a range
 - v. Count cells that contain labels and values only
 - vi. Use simple functions to add, subtract, multiply and divide values in a range
 - b. Create conditional formulas
 - i. Perform an action/a calculation based on the result of a condition if, sumif, countif, vlookup
 - c. Date operations:
 - i. Insert dates only
 - ii. Insert dates with time
 - iii. Calculate difference between two dates
 - iv. Calculate difference between two times
4. Sort data in ascending or descending order:
 - a. Sort using a single column
 - b. Sort using multiple columns
5. Format data
 - a. Formatting cells:
 - i. Number formats
 - ii. Conditional formatting
 - iii. Locking
6. Use a formula to manipulate data located in another worksheet
 - a. Copying formulas and functions:
 - i. Absolute cell referencing, relative cell referencing, using auto-fill
7. Create and format graphs:
 - a. Selecting appropriate chart.
 - b. Inserting chart titles, axes, gridlines, legends, labels, data source.
 - c. Saving graph as a separate sheet and as part of current sheet, formatting graphs; adjust colours, font, and borders, resizing graph.

- d. Graphs with trend lines.
- e. Simple pivot tables.
- 8. Printing spreadsheet
 - a. Set print area
 - b. Scaling a page to/on specific sheet
 - c. Adjust to feature
 - d. Fit to feature

UNIT IV - Database Management

(13 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

- 1. define field, record, relational database, primary key and foreign key.
- 2. create a database.
- 3. create a table.
- 4. manipulate a table.
- 5. create a relationship between two tables.
- 6. create queries, forms, and reports.
- 7. run queries, forms, and reports.
- 8. import data from a spreadsheet.

Content

- 1. Define field, record, relational database, primary key and foreign key.
- 2. Create and maintain a SQL database:
 - a. Learn guidelines for designing database and setting field properties
 - b. Create a new database
- 3. Create a table:
 - a. Create and save a table
 - b. Define fields and specify a table's primary key
 - c. Add records to a table
- 4. Manipulate a table:
 - a. Modify the structure of a table - delete, move and add fields, change field properties
 - b. Copy records and import tables from another database
 - c. Insert, delete and change records
- 5. Create a relationship between two tables.
- 6. Query a database:
 - a. Learn how to use the query window in design mode

- b. Create and run select queries
 - c. Sort data in a query
 - d. Specify an exact match condition in a query
 - e. Use the and/or logical operators
 - f. Use wildcard
- 7. Create forms and reports:
 - a. Forms:
 - i. Create forms
 - ii. Display data using a form
 - b. Report
 - i. Create report
 - ii. Insert a picture in a report
 - iii. Preview a report
 - iv. Use tables and queries as data source for report
- 8. Import data from a spreadsheet.

METHODS OF DELIVERY

- 1. Lectures
- 2. Laboratory activities
- 3. Presentation (individual/group)
- 4. Projects (group and individual)
- 5. Research
- 6. Demonstrations
- 7. Problem-solving

METHODS OF ASSESSMENT AND EVALUATION

- 1. Common coursework (group research project) - (should include unit four (4)
10%
 - 2. Word processing assessment (APA formatting, mail merge, etc.)
10%
 - 3. Presentation (using presentation software) (in appropriate professional attire)
10%
 - 4. Practical tests/assessments
 - a. Spreadsheet 10%
 - b. Database 10%
 - 5. Midsemester (theory) test (should be on Units 1-3)
10%
 - 6. Final examination
40%
- (20 MCQs 1 mark each and 4 ETQs 30 marks each to choose 2) NB changes

RESOURCE MATERIALS

Prescribed

Evans, A. R., Martin, K. & Poatsy, M.A., *Technology in Action Complete*. 9/E. Prentice Hall.

Shelly, G., Cashman, T., & Vermaat, M. *Microsoft Office 2010: Introductory*. KY: Course Technology Publishing.

Shelly, G., Cashman, T., & Vermaat, M. *Microsoft Office 2007: Introductory*. KY: Course Technology Publishing.

Vermaat, M.E., Sebok, S.L., Freund, S.M., Campbell, J.T., & Mark Frydenberg, M. *Discovering Computers* ©2018: *Digital Technology, Data, and Devices*.

Recommended

LaBerta, C. *Computers Are Your Future, Introductory*, 12/E. Prentice Hall.

Web Resources

Teach-ict.com,
[Http://owl.english.purdue.edu/owl/](http://owl.english.purdue.edu/owl/)

RUBRICS

WORD PROCESSING

COMPETENCIES	MARKS ALOTTED	MARKS EARNED
Correct margins	1	
- adjusted for binding (1)		
- not adjusted for binding (0)		
Page number	1	
- present <u>and</u> appropriately formatted (1)		
Sections	2	
- page formatting (orientation, size or margins) changed within document		
Paragraph formatting	5	
- appropriate indentation (1)		
- appropriate line spacing (1)		

- appropriate font type (1)		
- appropriate font size (1)		
- no inappropriate break (1)		
Main headings	3	
- ALL appropriately formatted (2)		
- formatted using the word processing styles feature (1)		
Subheadings	3	
- ALL appropriately formatted (2)		
- formatted using the word processing style feature (1)		
Object included	1	
Table of Contents	1	
- presented and generated by software (1)		
- not generated by software (0)		
Citation	1	
- using appropriate software feature (1)		
- created but not using software feature (0)		
Reference list appropriately formatted	4	
- appropriately indented (1)		
- appropriately arranged (1)		
- appropriate line spacing (1)		
- generated by software (1)		
TOTAL	22	

WORDPROCESSING Table

COMPETENCIES	MARKS ALLOTTED	MARKS EARNED
Merging cells	1	
Formatting	6	
- Merging Cells (1)		

- Splitting cells (1)		
- Shading cells (1)		
- Cell borders (adjusting size, removing) (2)		
- Heading repeated on each page (1)		
Formulas	6	
Add (1)		
Multiply (1)		
Average (1)		
Largest number in a range (1)		
Smallest number in a range (1)		
Number appropriately formatted (1)		
TOTAL MARKS	13	

Letter and Mail Merge

COMPETENCIES	MARKS ALLOTTED	MARKS EARNED
Appropriate letter head	1	
Date inserted by software	1	
Appropriate formatting	7	
- Correct margins (1)		
- Paragraph spacing (1)		
- Paragraph indentation (1)		
- Line spacing (1)		
- Font (1)		
- Appropriate business letter format used (1)		

- Software features appropriately used to layout business letter (1)		
Mail Merge	4	
Primary document (1)		
Appropriate mail merge fields (1)		
Source document (1)		
Merge is correct (1)		
TOTAL MARKS	13	

PRESENTATION GRAPHICS

COMPETENCIES	MARKS ALLOTTED	MARKS EARNED
Create a Presentation	8	
- insert a slide (1)		
- insert duplicate slides (1)		
- delete slide (1)		
- rearrange slide (1)		
- change presentation design (1)		
- change design for selected slides only (1)		
- format presentation background (1)		
- format individual slide background (1)		

Inserting Elements (graphics, video, sound)	3	
- graphics (1)		
- video (1)		
- sound (1)		
Animation	2	
- animate an object (1)		
- animate a slide (1)		
Timing	2	
- slide transition (1)		
- object transition (1)		
TOTAL MARKS	15	

SPREADSHEET

COMPETENCIES	MAR KS ALLOT TED	MAR KS EAR NED
Use formulas and functions:		
Formulas are appropriate for solving stated problem	2	
Data validation prevents inappropriate entries and gives appropriate error message	2	
Sort data using more than one variable	1	
Formula duplicated and data is correct (Constants are placed in cells, data is not placed directly in formula)	1	
Lookup function returns correct values from table in a separate spreadsheet	1	
Correct action performed based on given criterion or other appropriate data	1	
Numbers are rounded using appropriate spreadsheet function	1	
Conditional formatting is used to highlight exceptions	1	
Date function appropriately used	1	
Goal seek/Data table appropriately used and produces correct information	2	
Formatting/Layout		
Spreadsheet laid out to facilitate insertion/deletion	1	
Spreadsheet laid out so can be easily interpreted	1	
Inserted row/column does not affect previously inserted spreadsheet formulae	1	
Footer/header used to communicate appropriate information	1	
Column and row headings are appropriate	1	
Page size/orientation appropriate	1	
Graphs		
Appropriate charts to represent spreadsheet data created	2	
Graphs appropriately labelled	1	
Extracting data to allow summary information	2	

Printing		
Print area is appropriately defined	1	
Spreadsheet row or column set to repeat on each page	1	
Spreadsheet appropriately scaled for page	1	
TOTAL	25	

DATABASE

COMPETENCIES	MARKS ALLOTTE D	MARKS EARNED
Create and Maintain a Database		
Create tables using correct field definition and data type	3	
Appropriate primary key defined	1	
Appropriate foreign key used	1	
Modify data (add/delete)	2	
Modify table structure (add/delete fields, change field properties)	1	
Validate field entries (validation rule, appropriate error message applied)	2	
Data imported from a spreadsheet programme	1	
Query a Database		
Data from multiple tables/queries used to generate new table	2	
Data appropriately sorted in a query	1	
Query used to modify field content	2	
Query used to remove records	2	
Multiple conditions used in a single query (each criterion correct and result correct)	3	
At least ONE wildcard used	2	
Reports		
Report on specified fields generated	2	
Data grouped	1	
Data sorted	1	
Data appropriately summarised (totalled, averaged, counted, etc.)	2	
Header/Footer appropriately used	1	
Picture/Logo appropriately inserted	1	

TOTAL MARKS	31	
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THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	Human Anatomy and Physiology I
COURSE CODE:	NAPH1101
CREDITS:	3
CONTACT HOURS:	75 (30 theory, 45 hours practical)
PRE-REQUISITE(S):	Matriculation Requirements
CO-REQUISITE(S):	None
SEMESTER:	1

COURSE DESCRIPTION:

This course introduces learners to normal anatomy and physiology of the human body. An organ systems approach to learning the human body will be taken and learners will examine the relationship of structure and function, the interrelationship of different organ systems and how body physiology works to maintain homeostasis. The course is divided into two parts. **Part 1** introduces anatomy and physiology and focuses on the integumentary, musculoskeletal, nervous, endocrine, and respiratory systems. **Part II** covers the lymphatic, gastro-intestinal, reproductive, and urinary. Laboratory exercises are included in both courses. An understanding of the correlation between anatomical structure and physiological functions of the human body will provide a framework for sound clinical judgement in nursing practice.

COURSE OUTCOMES:

Upon successful completion of this course, learners will be able to:

1. demonstrate the correct usage of basic anatomical terminology.
2. describe the structure and characteristics of living matter.
3. explain the primary and secondary chemical elements and their abbreviations found in the body.
4. describe the organization and structural units of the body.
5. compare the major tissues found in the human body and relate their structure and location to specific functions.
6. describe the structure and function of the integumentary, cardiovascular, nervous, endocrine, and respiratory systems.
7. differentiate between the discrete and integrated structures and functions of each system within the human body.

8. integrate anatomic and physiological concepts into science-laboratory-based exercises.
9. recognize the importance of the knowledge of human anatomy and physiology as a pre-requisite for nursing care of patients.

UNIT I – Introduction to Anatomy and Physiology

(3 hours)

Learner Outcomes:

Upon successful completion of this unit, learners will be able to:

1. define terms used in this unit according to reputable sources.
2. identify the types of living matter, their structure and characteristics using key terms.
3. differentiate between the primary and secondary chemical elements found in the body.
4. apply knowledge of the anatomic directions, planes, positions, and cavities of the body to nursing care.
5. identify the structural units of the body.
6. differentiate between the location, structure, and function of the main tissue types.
7. describe the types, location, and function of the membranes of the human body.
8. distinguish between the systems of the human body.
9. identify diagnostic clinical technology instruments used in diagnosing select body parts.

Content:

1. Definition
 - a. Anatomy
 - b. Physiology
 - c. Biology
 - d. Gross anatomy
 - e. Microscopic anatomy
 - f. Cytology
 - g. Histology
2. Living matter
 - a. Definition
 - b. Types
 - i. Solids
 - ii. Liquids
 - iii. Gases
3. Structure of matter
 - a. Molecules
 - i. atoms
 - b. Ions
 - i. Definition

- c. Electrolytes
 - i. types
 - ii. functions
- d. PH
- 4. Characteristics of living matter
 - a. Metabolism
 - b. Growth
 - c. Reproduction
 - d. Adaptation
 - e. Organization
- 5. Elements
 - a. Compounds
 - b. Mixture
- 6. Chemical elements
 - a. Primary bio-elements
 - b. Other chemical elements
- 7. Anatomic directions
- 8. Anatomical body planes
- 9. Body positions
- 10. Main body cavities & functions
 - a. Cranial
 - b. Vertebral
 - c. Thoracic
 - d. Abdominal
 - e. Pelvic
- 11. Structural units of the body
 - a. Chemical
 - b. Cells
 - c. Tissues
 - d. Organs
 - e. Systems
- 12. Tissues & membranes
 - A. Tissues
 - a. Definition
 - b. Basic types: location, functions
 - i. Epithelium
 - ii. Connective
 - iii. Muscle
 - iv. Nervous

13. Membranes
 - a. Definition
 - b. Types, location, functions
 - i. Mucous
 - ii. Serous
 - iii. Cutaneous
 - iv. Synovial
14. Types of clinical technology diagnostic instruments:
 - a. X-rays
 - b. Computerized tomography (CT) scans
 - c. Magnetic resonance imaging (MRI)
 - d. Spiral CT scans
 - e. Ultrasound images
 - f. Digital subtraction angiography images (DSA)
 - g. Position emission tomography (PET) scans
 - h. Other.

UNIT II – Integumentary System: Skin, Nail and Hair

(3 theory hours)

Learner Outcomes:

Upon successful completion of this unit, learners will be able to:

1. describe the structure and functions of the various layers of the skin.
2. discuss the location, structure, and functions of the accessory structures of the skin.
3. compare the two types of glands in the skin based on structure and secretion.
4. describe the functions of the skin.
5. explain the term pigment and its role in skin colour differences among people.
6. apply knowledge of the growth and repair process of the skin and accessory structures to nursing care.

Content:

1. Skin structure & functions.
 - a. Epidermis & cells
 - b. Dermis & cells
 - c. Hypodermis: blood vessels & nerve cells
2. Accessory structures: structure & functions.
 - b. Sweat gland
 - c. Sebaceous gland
 - d. Hair
 - e. Nail

3. Functions of the skin.
 - a. Protection
 - b. Regulation of body temperature
 - c. Sensation
 - d. Absorption
 - e. Excretion
4. Pigment & functions.
5. Growth & repair of skin & accessory structures.

UNIT III –Support and Movement Systems of the Body: Musculoskeletal System (6 theory/15 practical hours)

Learner Outcomes:

Upon successful completion of this unit, learners will be able to:

1. describe the organization of the skeletal system.
2. distinguish between the classification, types, location, structure and function of bones, joints, cartilages, and muscles.
3. describe the blood and nerve supply of bones, joints, cartilages, and muscles.
4. explain the formation, growth and repair processes of bones, joints, cartilages, and muscles.
5. discuss the chemical composition of bones.
6. apply knowledge of the effects of diet on bone development in children and bone maintenance in older adults.
7. compare and contrast the structure of the four (4) bone classes, providing examples for each class.
8. identify bone markings of various types of bones using the bone classification system.
9. discuss the functional properties of the three (3) types of cartilages in maintaining joint function.
10. identify the location, structure, and function of skeletal, smooth and cardiac muscles.
11. describe the current concept of muscle contraction based on three (3) factors – neuro-electrical, chemical and energy sources.
12. compare isotonic and isometric contraction of skeletal muscles.
13. discuss the importance of good posture in relation to muscle function.

Content:

1. Skeletal system
2. Skeletal organization
 - a. Appendicular skeleton
 - i. Upper & lower limbs
 - b. Axial skeleton

- i. Skull: cranial & facial bones
 - ii. Vertebrae
 - iii. Ribs & sternum
- 3. Skeletal system/Bones
 - a. Classification & structure of bone
 - b. Bone markings
 - c. Parts of a long bone
 - d. Flat bone
 - e. Chemical composition of bone
 - f. Bone formation, growth & repair
 - g. Factors influencing bone formation
 - h. Growth of bones
 - i. Ossification
 - j. Bone function
- 4. Articular system/Joints: classifications, structure & function of each
 - a. Functional classifications
 - i. Synarthrodial: immovable
 - ii. Amphiarthrodial: slightly
 - iii. Diarthrodial: freely movable
 - b. Anatomical classifications
 - i. Fibrous
 - ii. Cartilaginous
 - iii. Synovial
- 5. Types of joint movements
 - a. Gliding
 - b. Angular
 - c. Special
- 6. Lifespan structural & functional changes
 - a. Fontanelles
 - b. Epiphyseal plates
 - c. Fibrocartilage losses: water, flexibility
 - d. Collagen
 - e. Movement
- 7. Types and functions of cartilages
 - a. Hyaline
 - b. Elastic
 - c. Fibrocartilage
- 8. Muscular system
- 9. Types, origin, insertion, structure, functions of muscles
 - a. Skeletal
 - b. Cardiac
 - c. Smooth

- d. Sliding filament theory
- 10. Physiology of muscle contraction
 - a. Tonus
 - b. Stimulation
 - c. Contraction
 - d. Response to stimuli
- 11. Muscle-bone interactions
 - a. Lever system
 - b. Flexors
 - c. Extensors
 - d. Abductors
 - e. Adductors
- 12. Tendons & ligaments
- 13. Mechanics of movement by leverage
 - a. Law of Motion (source: <http://www2.hesston.edu/Physics/BodyMech-LB/lbresearch.htm>)
 - b. Torque
 - c. Joints and levers
- 14. Posture
 - a. Definition
 - b. Maintenance
 - c. Importance to body as a whole.

UNIT IV – Integration and Coordination Systems: Nervous System

(9 theory/7 practical hours)

Learner Outcomes:

Upon successful completion of this unit, learners will be able to:

1. discuss the structural and functional divisions of the nervous system.
2. list the basic functions of the nervous system.
3. identify the structural and functional classification of neurons.
4. describe resting membrane potential including its resting membrane electrochemical basis.
5. discuss the nerve impulse transmission mechanism.
6. explain the mechanism of the reflex arc.
7. describe the process of brain development.
8. name the four (4) major regions of the adult brain.
9. describe the three (3) major regions of the brain stem, and the general function of each.
10. differentiate between the major spinal cord tracts, including their origin, termination, and function.

11. discuss the formation, characteristics, and functions of the cerebro-spinal fluid.
12. describe the sympathetic and parasympathetic nervous system.
13. describe the twelve (12) pairs of cranial nerves including their effect on body functions
14. distinguish between autonomic and somatic reflexes.
15. outline the structure, functions, and related physiology of the sense organs.

Content:

1. Organization of the nervous system.
2. Neurophysiology:
 - a. Basic principles of electricity
 - b. The resting membrane potential: the polarized state
 - c. Membrane potentials as signals
 - d. The synapse
 - e. Postsynaptic potentials & synaptic integration
 - f. Neurotransmitters & their receptors
3. Basic concepts of neural integration.
 - a. Organization of neurons: neuronal pools
 - b. Types of circuits
 - c. Patterns of neural processing
4. Developmental aspects of neurons
5. The brain
 - a. Regions & organization of the brain
 - b. Ventricles of the brain and cerebrospinal fluid
 - c. The cerebral hemispheres
 - d. The diencephalons
 - e. The brain stem
 - f. The cerebellum
 - g. Functional brain systems
 - h. Protection of the brain
 - i. Homeostatic imbalances of the brain
6. The spinal cord
 - a. Gross anatomy & protection of the spinal cord
 - b. Cross sectional anatomy of the spinal cord
 - c. Embryonic development of the brain & spinal cord
 - d. Developmental aspects of the CNS
 - e. Diagnostic procedures for assessing central nervous system (CNS) dysfunction
7. The peripheral nervous system (PNS)
 - a. Sensory receptors
 - b. Nerves and associated ganglia
 - c. Motor endings
8. Cranial nerves
9. Spinal nerves

- a. General features of spinal nerves
- b. Innervation of specific body regions
- 10. Reflex activity
 - a. Components of a reflex arc
 - b. Spinal reflexes
- 11. Developmental aspects of the PNS
- 12. The Autonomic Nervous System (ANS)
 - a. Comparison of the somatic & autonomic nervous system
 - b. Divisions of the ANS
- 13. Anatomy of the ANS
 - a. Parasympathetic (cranio-sacral) division
 - b. Sympathetic (Thoraco-lumbar) division
 - c. Visceral reflexes
- 14. Physiology of the ANS
 - a. Neurotransmitters and receptors
 - b. The effects of drugs
 - c. Interactions of the autonomic divisions
 - d. Control of autonomic functioning
- 15. Homeostatic imbalances of the ANS
- 16. Developmental aspects of the ANS
- 17. Sensory integration – reception to perception
 - a. General organization of the somato-sensory system
- 18. Motor integration – intention to effect
 - a. Levels of motor control
 - b. Homeostatic imbalances of motor integration
- 19. Higher mental functions
 - a. Brain wave patterns and the electro encephalogram (EEG)
 - b. Consciousness
 - c. Sleep and sleep-wake cycles
 - d. Memory
- 20. Developmental aspects of the special senses
- 21. The chemical senses -- tongue & nose: taste & smell
 - a. Structure of the tongue & nose
 - b. Taste buds & the sense of taste
 - c. The olfactory epithelium & the sense of smell
 - d. Homeostatic imbalances of the chemical senses
 - e. Diagnostic instruments of the nose
- 22. The eye & vision
 - a. Accessory structures of the eye
 - b. Structure of the eyeball
 - c. Physiology of vision
 - d. Diagnostic instruments of the eye

23. The ear: hearing & balance
 - a. Structure of the ear
 - b. Sound & the mechanisms of hearing
 - c. Homeostatic imbalances of hearing
 - d. Mechanisms of equilibrium & orientation
 - e. Diagnostic instruments of the ear.

UNIT V – Integration and Coordination Systems: Endocrine System

(6 theory/5 practical hours)

Learner Outcomes:

Upon successful completion of this unit, learners will be able to:

1. identify the endocrine organs/glands and their location.
2. explore the characteristics of the major endocrine glands.
3. distinguish between the types and functions of endocrine and exocrine glands.
4. differentiate between the functions of hormones secreted by endocrine glands.
5. discuss the effects of the major hormones on the body.
6. explain the regulatory effect of the hypothalamus and prostaglandin on the functions of the endocrine system.
7. describe the relationship of the nervous and endocrine systems in the control and integration of body function.
8. apply knowledge of the body's response to stress.
9. explain the significance of homeostasis in maintaining bodily functions.
10. describe the feedback mechanism and its involvement in maintaining body homeostasis.
11. describe the effects of aging on the function of the endocrine system.

Content:

1. Endocrine system
 - a. Developmental aspects
2. Glands: types & functions of each
 - a. Endocrine
 - b. Exocrine
3. Major endocrine organs: location, structure, function, hormones
 - a. Pituitary
 - b. Thyroid
 - c. Parathyroid
 - d. Adrenal
 - e. Ovaries
 - f. Testes
 - g. Pineal
 - h. Thymus

- i. Pancreas (islets of Langerhans)
4. Exocrine glands: location, structure, function, hormones
 - a. Salivary
 - b. Bile-producing glands of the liver
 - c. Pancreas (pancreatic fluid)
 - d. Gastric
5. Hormones (Review)
 - a. Types
 - b. Mechanisms of hormone action
 - c. Hormone target cell specificity
 - d. Half-life, onset & duration of hormone activity
 - e. Control of hormone release
6. Regulatory mechanisms
 - a. Hypothalamus
 - b. Prostaglandin
7. Stress syndrome
 - a. Definition
 - b. Concepts
 - c. Stressors
 - d. Mechanism of stress
8. Homeostasis
 - a. Definition
 - b. Purpose
 - c. Significance
 - d. Mechanism
 - e. Factors affecting homeostasis.
 - f. Feedback mechanism & maintenance of homeostasis
9. Effects of the aging process on the endocrine system.

UNIT VI – Processing and Transporting Function: Respiratory System (6 theory/15 practical hours)

Learner Outcomes:

Upon successful completion of this unit, learners will be able to:

1. define terms used in the respiratory system using key terms.
2. outline the embryonic developmental aspects of the respiratory system.
3. identify the structures of the respiratory system.
4. distinguish between the structures of the upper and lower respiratory tract.
5. describe the structure and functions of upper and lower respiratory structures.
6. describe the macroscopic and microscopic anatomy of the lung.
7. describe the general functions of the respiratory system.

8. explain the physiology of ventilation, arterialisation, alveolar exchange, and gas transport.
9. identify the instruments used to measure lung volumes.
10. relate one law concerning gas to the internal respiratory process.
11. outline the role of the respiratory system in the maintenance of acid-base balance.
12. describe the physiological factors which regulate respiration.
13. discuss the physiology of speech.

Content:

1. Definition of respiratory system terminologies including:
 - a. Respiration:
 - i. Internal respiration
 - ii. External respiration
 - iii. Cellular respiration
 - b. Ventilation
 - c. Inhalation
 - d. Exhalation
2. Developmental aspects of the respiratory system.
3. Structures of the respiratory system.
4. Upper respiratory tract structures.
 - a. Mucous membranes
 - b. Nose
 - c. Nasal cavity
 - d. Para-nasal sinuses
 - e. Pharynx
 - f. Larynx
5. Lower respiratory tract structures.
 - a. Trachea
 - b. Bronchial tree
 - c. Lungs
 - d. Divisions
6. Functions of the respiratory system.
 - a. Ventilation of the lungs
 - b. Extraction of oxygen from the air & transfer to bloodstream
 - c. Excretion of carbon dioxide and water vapour
 - d. Maintenance of acid base balance in the blood
7. Physiology of respiration.
 - a. Pulmonary ventilation
 - b. External respiration
 - c. Transport of respiratory gases
 - d. Internal respiration
 - e. Types of breathing
 - f. Cellular respiration

8. Selected principles of gases.
 - a. Dalton's law
 - b. Boyle's law
 - c. Gaseous exchange in lungs
9. Diagnostic instrument (s) used in measuring lung volume.
10. Regulation of respiration.
11. Role of respiratory system in maintaining acid-base balance.
 - a. PH of blood
 - b. Oxygen
 - c. Carbon dioxide
 - d. Haemoglobin
12. Physiology of speech.

METHODS OF DELIVERY:

1. Lecture/Discussion
2. Demonstration
3. Visual learning strategies e.g. charts, models, PowerPoint presentation, drawings
4. Gaming strategies
5. Debate
6. Self- directed learning strategies
7. Laboratory sessions
8. Individual/group project

Area Used for Learning

1. Classroom
2. Library
3. Clinical Skills Laboratory
4. Anatomy Laboratory

Learning Experiences

1. Laboratory exercises
2. Observation of post-mortem
3. Use of diagnostic instruments

Required Skills

1. Identification of gross & microscopic anatomical parts
2. Assessment of body symmetry

Student Assessment

1. Mid-semester:	20%
2. Individual or group presentation/ written objective type and essay exam/ project	20%
3. End of Semester: Written objective-type and essay examination	60%
Total	100%

RESOURCE MATERIAL:

1. Allen, C., & Harper, V. (2014). *Laboratory manual for anatomy & physiology* (5th ed.). Somerset, New York: John Wiley & Sons.
2. Tortora, G. J., & Derrickson, B. H. (2013/2014). *Introduction to the human body: The essentials of anatomy and physiology* (10th ed.). New York: John Wiley & Sons, Inc.

Online resources:

<https://www.ebscohost.com>

www.springerlink.com/books

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	INTRODUCTION TO PHLEBOTOMY
COURSE CODE:	PHIP1101
CREDITS:	3
CONTACT HOURS:	75 (30 Theory, 45 Practical)
PREREQUISITES:	None
COREQUISITES:	None
SEMESTER:	I

COURSE RATIONALE

This course introduces students to the fundamentals of laboratory operations, communication and human anatomy that underpin the safe and efficient practise of phlebotomy in today's clinical laboratory setting.

COURSE DESCRIPTION

Students are required to demonstrate professional competence and capacity while adapting and delivering quality healthcare in a rapidly changing environment. They will be trained to draw blood from patients in a safe and sanitary manner and to practise proper hand hygiene and donning and removing of PPE when entering and leaving controlled hospital environments.

COURSE OUTCOMES

Upon successful completion, learners will be able to:

1. explain the significance of phlebotomy and its role in healthcare.
2. explain ethical, safety and quality standards required of phlebotomists.
3. demonstrate effective verbal and nonverbal communication skills.
4. use appropriate medical terminology in healthcare communication.
5. identify essential elements of laboratory test requisitions, specimen labels and test results.
6. describe the essential structures of the circulatory system.

7. outline common disorders and diagnostic tests of the circulatory system.

UNIT I: PHLEBOTOMY AND QUALITY ASSESSMENT	(9 theory + 12 practical hours)
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Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. define phlebotomy and understand its significance in healthcare.
2. state functions of the various clinical laboratory departments and essential personnel.
3. outline required competencies and certification to practise phlebotomy in Jamaica and associated jurisdictions.
4. describe ethical standards and character traits for phlebotomists.
5. identify components of the chain of infection, describe infection-control procedures used to break the chain and identify functions of infection-control programmes.
6. describe proper procedures for hand hygiene, putting on and removing PPE and entering controlled hospital environments.
7. describe standard and transmission-based precautions and identify the organisations that developed them.
8. state safety rules for working in laboratories and patient areas.
9. describe hazards, identify warning symbols, list actions when incidents occur and specify rules for proper biological, electrical, fire, radiation, and chemical safety.
10. identify national organisations, agencies and regulations that support quality assurance in healthcare.
11. define quality and performance improvement measurements as they relate to phlebotomy.
12. describe components of a quality assurance (QA) programme and identify areas in phlebotomy subject to quality control (QC).
13. state areas in phlebotomy subject to QC and identify QC procedures associated with each.

Content

1. Definition of phlebotomy and its role in the clinical laboratory.
2. Clinical laboratory departments and personnel.
3. Competencies, certification, and professionalism.

4. Safety and infection control in the clinical laboratory.
5. Quality assurance and management in the clinical laboratory.

UNIT II: MEDICAL TERMINOLOGY, LANGUAGE AND COMMUNICATION SKILLS (6 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. outline the basic communication loop.
2. communicate with patients and healthcare workers.
3. demonstrate effective verbal and nonverbal communication skills.
4. outline the basics of initial communication with patients with hearing and/or sight impairment.
5. describe how written and electronic communication are handled in the clinical laboratory.
6. identify the essentials of patient-healthcare worker communication.
7. recognise the importance of medical terminology in healthcare communication.
8. identify basic word elements individually and in medical terms.
9. state meanings of common word roots, prefixes and suffixes and identify unique plural endings.
10. state the meanings of medical terms comprising elements discussed in the unit.
11. demonstrate proper pronunciation of medical terms by using general pronunciation guidelines.
12. state the meanings of common medical abbreviations.

Content

1. Communication in the healthcare setting
2. Medical terminology

UNIT III: LABORATORY OPERATIONS AND DOCUMENTATION (5 theory + 18 practical hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. describe basic components of medical records.

2. outline the importance of maintaining confidentiality and privacy related to patient information and give examples of cases.
3. describe essential elements of laboratory test requisitions, specimen labels and test results.
4. identify potential clerical or technical errors that may occur during labelling or documentation of phlebotomy procedures.
5. outline policies and procedures for written verbal and electronic reporting of laboratory results.
6. identify essential components and functions of computers in healthcare.

Content

1. Test requisitions, specimen labels and blood collection.
2. Reporting laboratory results.
3. Documentation and medical records.

UNIT IV: ANATOMY AND PHYSIOLOGY OF THE CIRCULATORY SYSTEM (8 theory + 12 practical hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. identify layers and other structures of the heart and describe their function.
2. demonstrate how to take blood pressure.
3. explain the values of blood pressure readings measured.
4. describe the two main divisions of the cardiovascular system.
5. trace the flow of blood through the cardiovascular system.
6. outline differences in structure and function of the different types of blood vessels.
7. locate major arm and leg veins and describe the suitability of each for venepuncture.
8. state the major constituents of blood.
9. describe the function of each formed element of blood.
10. differentiate among serum, plasma and whole blood.
11. describe how ABO and Rh blood types are determined.
12. explain the importance of compatibility testing prior to transfusion.

13. define haemostasis.
14. describe the process of coagulation and fibrinolysis.
15. describe the function, structure and vessels of the lymphatic system.
16. state disorders and diagnostic tests of the circulatory system.
17. relate to tests used for diagnosing conditions of the circulatory system.

Content

1. Cardiovascular system
2. Blood – components and testing
3. Haemostasis and coagulation
4. Lymphatic system

LABORATORY EXERCISES

1. Introduction to the clinical laboratory
2. Lab safety – PPE
3. Lab safety – infection control and lab accident protocols
4. Lab math – reagent preparation
5. Sample requisitioning and accessioning
6. Basic laboratory equipment and sample preparation – centrifugation and aliquoting
7. Vital signs – body temperature, respiration rate, pulse rate and blood pressure
8. ABO blood typing
9. Tourniquet tying and phlebotomy site identification
10. Lab examination

METHODS OF DELIVERY

1. Lectures
2. Discussions
3. Case studies and analysis
4. Presentations
5. Research

6. Project
7. Simulations
8. Lab exercises

METHODS OF ASSESSMENT AND EVALUATION

Tests	20%
Weekly quizzes	5%
Project	5%
Presentations	10%
Lab activities and reports	15%
Lab examination (3 hours)	5%
Final examination (2 hours)	40%
Total	100%

RESOURCE MATERIALS

Main Text

McCall, R. E., & Tankersley, C. M. (2015). *Phlebotomy essentials*. 6th ed. Lippincott Williams & Wilkins.

Supplementary Texts

Garza, D., Becan-McBride, K. (2018). *Phlebotomy handbook: blood collection essential*. 10th ed. New Jersey: Pearson Prentice Hall.

Itatani, C., & Shipp, N. (2012). *Phlebotomy best practices: a case study approach*. 1st ed. Philadelphia: Lippincott Williams & Wilkins.

Websites

Ebscohost Databases – <http://www.ebscohost.com>

Springer ebooks – <http://www.springer.com>

ProQuest Databases – <http://www.proquest.com>

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	Introduction to Psychology I
COURSE CODE :	PSYC1111 : Previous Code (PSYC1101)
CREDITS:	3
CONTACT HOURS:	45 (theory)
PREREQUISITES:	None
COREQUISITES:	None
SEMESTER:	II

COURSE DESCRIPTION

This course is designed primarily to provide students with a general understanding and appreciation of human behaviour and its impact on social and business relationships. More specifically, it will cover approaches to the study of psychological, biological and developmental bases of behaviour, perception, attitude, motivation, conflict and change and stress management.

COURSE OUTCOMES

Upon successful completion of this course, students should be able to:

1. understand psychology as an area of study.
2. develop an understanding of the theories and the role of theorists in the study of psychology.
3. understand the biological and developmental bases of behaviour.

UNIT I –The Nature of Psychology

(9 hours)

Learner Outcomes

At the end of this unit, students will be able to:

1. define and use relevant definitions relating to psychology and its areas of study.
2. discuss the eight critical thinking guidelines in psychology.
3. examine the five major approaches to the study of psychology and their proponents.
4. differentiate approaches at 3.

5. use psychological theories of development to explain behaviour.
6. identify the methods and tools used by psychologists to investigate psychological issues.

Content

1. The nature of psychology:
 - a. Psychology - definition (scientific study)
 - b. As a behavioural science, relevance to career fields
2. Eight critical thinking guidelines in psychology
3. Approaches and application: Structuralism, Functionalism, Gestalt, Biological, Cognitive, Behavioural, Humanistic, Evolutionary, Psychodynamic/Psychoanalytical
4. Psychological thinkers and their theories: Freud, Erikson, Piaget, Watson, Skinner, Maslow, Pavlov, Rogers
5. Research methods: tests, experiments, surveys, case studies, observation, correlation

Suggested Activities

1. Apply critical thinking guidelines to popular as well as psychological claims.
2. Class discussion on how contemporary perspectives in psychology would explain crime and violence in Jamaica.

UNIT II – Biological and Developmental Bases of Behaviour

(8 hours)

Learner Outcomes

Upon successful completion of this unit, students should be able to:

1. describe divisions of the nervous system and explain how behaviour is driven by the nervous system.
2. explain the relationship among genes, environment, and behaviour.
3. define developmental psychology.
4. discuss factors governing development of behaviour.
5. explain and compare different approaches to psychological development.
6. use theories of psychological development to explain human behaviour.
7. relate stages of psychological development to types of behaviour.

Content

1. Biological bases of behaviour:
 - a. The nervous system: CNS, PNS, etc.
 - b. Genetic influences on behaviour
2. Developmental psychology: definition

- a. Environmental influences on behaviour; nature/nurture debate
- b. Factors that influence development
- c. Theories of development - Kohlberg (moral reasoning); Freud (psychosexual); Piaget (cognitive); Erikson (psychosocial)

Suggested Activities

1. Class discussions whereby students share personal experiences that support any stage of Erik Erikson, Lawrence Kohlberg or Freud's theories.
2. Discussions on the level of morality typically demonstrated in Jamaica.

UNIT III –Perception

(3 hours)

Learner Outcomes

Upon successful completion of this unit, students should be able to:

1. define and use important terms relating to perception.
2. assess the relationship between perception and behaviour.

Content

1. Perception (definition)
 - i. Sensation
 - ii. Selective attention
 - iii. Illusion
 - iv. Perceptual organisation
2. Factors influencing perception:
 - i. Motives
 - ii. Interests
 - iii. Person
 - iv. Target
3. Illusion:
 - i. Constancies (size, shape, brightness, colour)
 - ii. Figure ground
4. Stereotyping

Suggested Activity

Class discussion on the movie 'The Matrix' and the concept of perception without sensation.

UNIT IV – Attitudes

(3 hours)

Learner Outcomes

Upon successful completion of this unit, students should be able to:

1. formulate a working definition of attitude.
2. examine components of attitude.
3. explain the development of:
 - a. cognitive dissonance
 - b. prejudice
 - c. stereotyping

Content

1. Attitude (definition)
2. Components and formation of attitude (affective, behavioural, cognitive)
3. Changing attitudes:
 - a) Cognitive dissonance
 - b) Prejudice
 - c) Stereotyping

Suggested Activity

Examine a case in which cognitive dissonance is evident and explain how attitudes changed.

UNIT V – Personality

(5 hours)

Learner Outcomes

Upon successful completion of this unit, students should be able to:

1. define personality.
2. differentiate between two theories of personality.
3. assess the importance of positive self-concept to the development of self-esteem.
4. identify different types of defence mechanisms and explain how these might be used in various situations.

Content

1. Personality (definition)
2. Theories of personality:
 - i. Psychoanalytic (Freud)
 - ii. Humanistic (Rogers)

- iii. The Big Five Personality (Eysenck)
- 3. Development of self-concept/self-esteem
- 4. Defence mechanisms (types and uses)

Suggested Activity

Students assess their own personality using the tenets of one of the theories of personality.

UNIT VI –Motivation

(5 hours)

Learner Outcomes

Upon successful completion of this unit, students should be able to:

- 1. define and use correctly concepts relating to motivation.
- 2. apply theories of motivation to the explanation of behaviour in given situations.

Content

- 1. Motivation:
 - a. Definitions and concepts:
 - i. Drive
 - ii. Needs
 - iii. Motives
 - b. Theories
 - i. Abraham Maslow - Maslow's Hierarchy of Needs
 - ii. Frederick Herzberg - Two-Factor Theory
 - iii. David McClelland - Theory of Needs

Suggested Activity

Class discussion on how Maslow's theory may be applied to Jamaica's education system.

UNIT VII – Conflict and Change

(6 hours)

Learner Outcomes

Upon successful completion of this unit, students should be able to:

- 1. define and use correctly concepts relating to conflicts.
- 2. assess potential causes of conflicts as they operate in given situations.

3. apply appropriate conflict resolution techniques to given situations.
4. evaluate effects of conflict (positive and negative) on relationships.
5. define and use correctly concepts relating to change.
6. identify and describe different agents of change.
7. apply the approach-avoidance theory to situations in Jamaica.
8. give reasons for resistance to change.
9. identify and use techniques for reducing resistance to change.

Content

1. Conflict:
 - i. Definition
 - ii. Types of conflict (approach-avoidance, approach-approach, avoidance-approach, avoidance-avoidance, double approach-avoidance)
 - iii. Causes
 - iv. Conflict resolution techniques - collaboration, compromise, competition, avoidance, accommodation
 - v. Effects of conflict - positive and negative
2. Change:
 - i. Definition
 - ii. Change agent - role, types (internal and external)
 - iii. Reasons for resistance to change
 - iv. Techniques for reducing resistance to change - communication/education, etc.

Suggested Activity

Resolve a conflict using one conflict resolution technique examined.

UNIT VIII –Stress

(3 hours)

Learner Outcomes

Upon successful completion of this unit, students should be able to:

1. define stress.
2. identify causes of stress in given situations.
3. identify and explain symptoms of acute stress.
4. use theories of psychological development to recommend techniques for managing stress.

Content

1. Stress
 - a. Definition
 - b. Causes
 - c. Symptoms of acute stress
 - d. Stress management techniques:
 - i. Relaxation
 - ii. Exercise
 - iii. Time management

Suggested Activity

Students demonstrate, through role play, symptoms of acute stress addressed by a stress management technique.

METHODS OF DELIVERY

This course will be administered by lectures and interactive tutorials that cover a wide range of topics designed to facilitate practical opportunities for learning and application of sports psychological techniques.

1. Lectures
2. Case studies
3. Class work
4. Class quizzes
5. Video presentations
6. Discussions
7. Research
8. Simulation
9. Role play

METHODS OF ASSESSMENT AND EVALUATION

- | | |
|------------------------------------|-----|
| 1. Common coursework (midsemester) | 10% |
| 2. College coursework (project) | 20% |
| 3. Presentation | 10% |
| 4. Final examination | 60% |

RESOURCE MATERIALS

Prescribed Texts

Wade, C. & Tavris, C. (2010). Psychology (10th ed). Upper New Saddle, NJ: Pearson Education.

Rathus, S. A. (2002). *Essentials of psychology*. (7th ed.). FL: Harcourt Publishing.

American Psychological Association (APA) - www.apa.org

www.ebscohost.com

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	MEDICAL ETHICS AND LEGAL RESPONSIBILITY
COURSE CODE:	PWMR1301
CREDITS:	3
CONTACT HOURS:	45 (Theory)
PREREQUISITES:	None
COREQUISITES:	None
INTERNSHIP:	Summer

COURSE DESCRIPTION

Ethical principles that guide healthcare workers are important for appropriate treatment of patients. This therefore gives rise to the need to understand ethical principles which underscore the concepts of beneficence, nonmaleficence, autonomy and justice. Additionally, there are legal frameworks within which health workers operate. Ethical and legal concepts described in this course will inform healthcare workers of appropriate actions that will reduce breaches of patients' rights as well as the burden of lawsuits on workers and their places of employment.

COURSE DESCRIPTION

This course is designed to provide an understanding of the general/fundamental principles of ethical and legal responsibilities in the medical environment. It will give an overview of consequences and ramifications of breaches in policies and laws and aid in the application of principles to balance ethical dilemma.

COURSE OUTCOMES

Upon successful completion of this course, learners will be able to:

1. explain legal concepts and apply them to general medical ethics.
2. outline the history and evolution of ethics.
3. explain what ethics is and fundamental ethical principles surrounding ethics.
4. review principles of confidentiality and breach of confidentiality.

5. recognise ethical duties in the medical profession and how they apply to healthcare professionals.
6. analyse principles of informed consent and exception to consent.
7. explain the duties of disclosure.

UNIT I: EVOLUTION OF ETHICS

(8 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. explain 'ethics'.
2. distinguish between 'ethics' and 'moral'.
3. summarise the history of ethics in the medical field.
4. identify the four fundamental ethical principles.

Content

1. Definition of ethics.
2. History of ethics.
3. Ethics and morality.
4. Fundamental ethical principles:
 - a) Autonomy
 - b) Beneficence
 - c) Nonmaleficence
 - d) Justice
5. Balancing the needs of patients with ethical obligations of the healthcare profession.

UNIT II: CONFIDENTIALITY

(13 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. outline the meaning of confidentiality to the healthcare profession.

2. relate the nature of a confidential relationship between patient and healthcare professional.
3. explain how confidentiality can be breached.
4. examine consequences of breach of confidentiality.
5. explain the legal ramifications when confidentiality is breached.
6. outline the limits of the confidentiality principle.

Content

1. Definition of confidentiality.
2. Application of confidentiality principle to patient/healthcare professional relationship.
3. Confidentiality duties owed by healthcare professionals to patients.
4. Breach of confidentiality and its legal ramifications.
5. Limits and/or exceptions to the doctrine of confidentiality.
6. Legal problem – use of the IRAC method – issues, rule of law, application of law to facts and conclusion.
7. Application of relevant cases and their analysis.

UNIT III: ETHICAL DUTIES

(10 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. identify ethical duties owed by healthcare professionals.
2. identify different circumstances in which these ethical duties apply.
3. explain the need for ethical duties in daily practice as healthcare professionals.
4. outline the consequences of breach of ethical duties.
5. identify legislations and case law that speak to ethical duties in the medical profession.

Content

1. Ethical duties in the medical profession.
2. Reasons for ethical duties owed by healthcare professionals.

3. Organizational bodies set up by various healthcare groups to monitor breach of ethical duties.
4. Legal problem – use of the IRAC method – issues, rule of law, application of law to facts and conclusion.
5. Legal position (legislation and/or case law) on ethical duties.
6. Breach of ethical duties.
7. Consequences of breach of ethical duties and possible penalties.
8. Application of relevant cases and their analysis.

UNIT IV: DUE CARE AND INFORMED CONSENT

(12 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. outline the four types of consent.
2. identify components of informed consent.
3. explain the concept, duty of care.
4. identify when to obtain consent and from whom.
5. explain the essence of informed consent.
6. assess circumstances surrounding the presumption of competence.
7. explain the duty of disclosure and what should be disclosed.
8. assess what to do regarding consent when patients are minors.
9. identify exceptions to consent.
10. explain patient waiver of consent.

Content

1. Types of consent.
2. Definition of informed consent.
3. Definition of ‘due care’ and ‘duty of care’.
4. Elements of consent.
5. Circumstances where consent should be obtained.

6. Association between consent and the ethical principle of autonomy.
7. Presumption of competence.
8. Definition of disclosure.
9. Duty of disclosure by healthcare professionals.
10. Procedure when patient cannot give informed consent.
11. Legal position on informed consent.
12. Waiver of consent by patients.
13. Legal problem – use of the IRAC method – issues, rule of law, application of law to facts and conclusion.
14. Application of relevant legislation, cases and their analysis.

METHODS OF DELIVERY

1. Lectures
2. Case studies and analysis
3. Peer discussions
4. Group work
5. Presentations – Skype, Google Meet, YouTube Videos, PowerPoint, etc.
6. Debates
7. Research

METHODS OF ASSESSMENT AND EVALUATION

- | | |
|-----------------------|-----|
| 1. Midsemester test | 15% |
| 2. Common coursework | 15% |
| 3. College coursework | 10% |
| 4. Final Examination | 60% |
- a) ETQs/Structured Questions (4)
 - i. Compulsory (case study analysis)
 - ii. Three questions to CHOOSE any one
 - b) MCQs (20)

RESOURCE MATERIALS

Main texts

1. Aarons, DE. MD 67D (2020). *Medical Ethics and the Doctor-Patient Relationship*.
Faculty of Medical Sciences, Mona, UWI: Master's in Family Medicine.
2. Hébert, P. C., & Rosen, W. (2009). *Doing right: a practical guide to ethics for medical trainees and physicians* Don Mills, ON: Oxford University Press.
3. The Medical Council of Jamaica, *A Guide to Ethical Practice in Jamaica*.

Recommended

Ministry of Justice (Jamaica) website

<https://moj.gov.jm/>

- *The Medical Act of Jamaica*

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	PHLEBOTOMY EQUIPMENT, PROCEDURES AND TECHNIQUES
COURSE CODE:	PHPT1101
CREDITS:	3
CONTACT HOURS:	75 (30 Theory, 45 Practical)
PREREQUISITES:	PHIP1101 Introduction to Phlebotomy
COREQUISITES:	PWMR1301 Medical Ethics and Legal Responsibilities
SEMESTER:	II

COURSE RATIONALE

Phlebotomists are trained healthcare workers responsible for safe and sanitary drawing and collection of blood specimen. This course is designed to formally improve students' knowledge, skills and techniques in the principles and practise of phlebotomy. Students will be trained in areas of venepuncture, laboratory analysis and specimen processing. These functions are engaged with the supervision of a clinical laboratory technologist.

COURSE DESCRIPTION

For students who have successfully completed Introduction to Phlebotomy (PHIP1101), this course provides added theory and practical exposure to develop competence in drawing and handling venous and capillary blood samples using various techniques.

COURSE OUTCOMES

Upon successful completion of this course, learners will be able to:

1. identify the correct anatomical site for venepuncture and capillary puncture.
2. prepare the correct anatomical site for venepuncture and capillary puncture.
3. describe the protocols applied to avoiding or handling procedural error, risks and patient complications associated with blood collection.
4. draw blood specimens.
5. interpret accurately test requests for blood specimens drawn.

6. distribute specimens to various departments of a laboratory.
7. describe the purpose, principle, procedure and precautions associated with each special collection procedure.
8. describe the purpose, principle, procedure and precautions associated with collection, labelling and handling of non-blood specimens.

UNIT 1: PHLEBOTOMY EQUIPMENT AND PRE-ANALYTICAL VARIABLES (3 theory + 3 practical hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. describe physiological variables that influence laboratory test results.
2. identify those tests most affected by each physiological variable.
3. list problem areas to avoid in site selection.
4. identify causes for concern.
5. describe procedures to follow when each problem is encountered.
6. identify various vascular access sites and devices.
7. describe various vascular access sites and devices as well as challenges to access.
8. explain how to handle patient complications associated with blood collection.
9. explain how to avoid or handle procedural error, risks, specimen quality concerns and failure to draw blood.

Content

1. Pre-analytical variables
2. Medical errors in blood collection
3. General blood collection equipment and supplies
4. Blood collection additives

Suggested Practicals

1. Personal safety – putting on/removing protective gloves, proper hand hygiene, etc.
2. Organise work area – prepare instruments
3. Collect supplies

4. Collect blood samples
5. Test samples
6. Clean work area

UNIT II: VENEPUNCTURE PROCEDURES

(12 theory + 21 practical hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. identify the types of requisitions used and required requisition information.
2. describe the test request process.
3. describe how to properly handle special situations associated with patient contact (bedside manner).
4. explain the importance of proper patient identification.
5. outline how to handle discrepancies with patient information.
6. manage the process of patient testing, concerns, and refusal to be tested.
7. verify fasting status and other diet requirements of each patient.
8. communicate best practice to patients whose test requires fasting or special diet.
9. list the order of draw for collecting venepuncture specimens.
10. describe each step in the venepuncture procedure.
11. list necessary information found on specimen tube labels.
12. describe collection procedures when using a butterfly or syringe.
13. outline the proper way to safely dispense blood into tubes following syringe collection.
14. describe unique requirements associated with drawing from special populations including paediatric, geriatric, and long-term care patients.
15. list acceptable reasons for inability to collect a specimen.
16. describe the procedure required upon inability to collect a specimen.
17. trace the flow of specimens through a laboratory.
18. describe routine and special specimen handling procedures for laboratory specimens.
19. list time constraints and exceptions for delivery and processing of specimens.
20. identify required protective equipment to be worn when processing specimens.

21. describe steps involved in processing the different types of specimens and list the criteria for specimen rejection.

Content

1. Patient identification and site selection
2. Routine evacuated tube system venepuncture
3. Winged infusion set (butterfly) procedure
4. Syringe venepuncture procedure
5. Paediatric venepuncture
6. Geriatric venepuncture
7. Special patient populations
8. Procedure for inability to collect specimen
9. Specimen handling, transportation and processing

Suggested Practicals

1. Personal safety – putting on/removing protective gloves, proper hand hygiene, etc.
2. Organise work area – prepare instruments
3. Collect supplies
4. Collect blood samples – venepuncture
5. Transport samples
6. Test samples
7. Store samples
8. Clean work area

UNIT III: CAPILLARY PUNCTURE EQUIPMENT AND PROCEDURES (3 theory + 6 practical hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. describe the various types of equipment needed for capillary specimen collection.
2. describe the composition of capillary specimens.

3. identify which tests have different reference values when collected by capillary puncture methods.
4. name tests that cannot be performed on capillary specimens.
5. identify indications for performing capillary puncture on adults, children, and infants.
6. list the order of drawing when collecting capillary specimens.
7. describe the proper procedure for selecting puncture site and collecting capillary specimens from adults, infants, and children.
8. describe routine tests performed on capillary specimens.
9. outline essential differences between venous and capillary blood specimens.

Content

1. Indications for skin puncture.
2. Composition of capillary blood.
3. Capillary puncture equipment.
4. Technique for collecting diagnostic capillary blood specimens.
5. Analysis of capillary blood specimens.
6. Differences in venous and capillary blood specimens.

Suggested Practicals

1. Personal safety – putting on/removing protective gloves, proper hand hygiene, etc.
2. Organise work area – prepare instruments
3. Collect supplies
4. Collect blood samples – venepuncture
5. Transport samples
6. Test samples drawn from various veins and capillaries
7. Store samples
8. Clean work area

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. explain the purpose, principle, and precautions behind each special collection procedure.
2. identify steps involved in sample collection.
3. list special supplies or equipment required for sample collection.
4. list hazards and complications of arterial puncture.
5. identify sampling errors that may affect the integrity of an arterial specimen.
6. describe the criteria for arterial specimen rejection.
7. describe patient identification and specimen labelling procedures required for blood bank tests.
8. identify types of specimens typically required for blood bank tests.
9. describe sterile techniques in blood culture collection.
10. explain the importance of a blood culture request by physicians.
11. list examples of coagulation specimens.
12. describe how to properly collect and handle coagulation specimens.
13. describe chain of custody procedures and identify tests that may require them.
14. identify the role of drug half-life in chain of custody procedures.
15. provide names of drugs that use chain of custody procedures.
16. describe peak, trough and therapeutic levels in therapeutic drug monitoring.
17. define point-of-care testing (POCT).
18. explain principles of POCT.
19. identify any special equipment required for POCT.

Content

1. Blood cultures
2. Glucose tolerance test (GTT) and postprandial glucose test
3. Arterial blood gases

4. Therapeutic drug monitoring (TDM)
5. Collection for trace metals (elements)
6. Toxicology and drug screening specimens
7. Genetic molecular tests
8. Intravenous line collections
9. Donor room collections
10. Therapeutic phlebotomy
11. Point-of-care collections and testing

Suggested Practicals

1. Personal safety – putting on/removing protective gloves, proper hand hygiene, etc.
2. Organise work area – prepare instruments
3. Collect supplies
4. Collect blood samples
5. Transport samples
6. Test samples
7. Store samples
8. Clean work area

UNIT V: URINALYSIS, BODY FLUIDS AND OTHER SPECIMENS (4 theory + 3 practical hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. describe non-blood specimen labelling and handling.
2. describe various urine tests, specimen types and collection and handling methods.
3. instruct patients on the correct procedure for timed urine specimens and midstream clean-catch specimens.
4. describe types of non-blood specimens other than urine and say why they are tested.
5. describe collection and handling procedures for non-blood specimens other than urine.
6. identify tests performed on various non-blood specimens other than urine.

Content

1. Urine collection
2. Cerebrospinal fluid
3. Faecal specimens
4. Seminal fluid
5. Buccal swabs
6. Nasopharyngeal and throat swab collections

LABORATORY EXERCISES

1. Patient identification, tourniquet tying, phlebotomy site identification and patient preparation
2. Practise of ETS procedure
3. Practise of syringe method
4. Practise of winged infusion set method on dorsal surface of the hand
5. Practise of skin puncture
6. Practise and assessment of all procedures – ETS, syringe, winged infusion set, skin puncture
7. Urinalysis and occult faecal blood test

METHODS OF DELIVERY

1. Lectures
2. Presentations
3. Lab exercises
4. Demonstrations
5. Role playing
6. Practise sessions

METHODS OF ASSESSMENT AND EVALUATION

Tests	30%
Weekly quizzes	5%
Assignments	5%
Presentations	10%

Lab activities and reports	10%
*Final examination – practical (9 hours)	20%
Final examination – theory (2 hours)	20%
Total	100%

*Each student will be assessed on 25 draws during the last four weeks of the course using phlebotomy techniques as follows:

ETS	8
Syringe	7
Butterfly	5
Capillary puncture	5

Patients with a variety of vein types and distributions should be used. Assessments will be graded using the checklist attached.

RESOURCE MATERIALS

Main Text

McCall, R. E., & Tankersley, C. M. (2015). *Phlebotomy essentials*. 6th ed. Lippincott Williams & Wilkins.

Supplementary Texts

Garza, D., & Becan-McBride, K. (2018). *Phlebotomy handbook: blood collection essential*. 10th ed. New Jersey: Pearson Prentice Hall.

Itatani, C., & Shipp, N. (2012). *Phlebotomy best practices: a case study approach*. 1st ed. Philadelphia: Lippincott Williams & Wilkins.

Websites

Ebscohost Databases – <http://www.ebscohost.com>

ProQuest Databases – <http://www.proquest.com>

Springer ebooks – <http://www.springer.com>

Venepuncture Performance Checklist
(Check off each area performed)

Name: _____

Date: _____

	1	2	3	4	5	6	7	8	9	10
1. Identify tests and tubes to be drawn										
2. Smile, introduce self and briefly explain what will be done										
3. Identify patient properly and ask patient to repeat his/her name										
4. Position patient for comfortable collection										
5. Apply tourniquet, select suitable vein and loosen tourniquet										
6. Cleanse area with alcohol in vigorous, circular strokes										
7. Position specimen for air drying for a few seconds										
8. Assemble correct equipment										
9. Tighten tourniquet										
10. Remove needle cover and keep sterile										
11. Grasp below insertion site										
12. Puncture vein at correct angle (15° to 30°)										
13. Enter vein successfully										
14. Draw correct amount of blood										
15. Release tourniquet as soon as blood enters final tube										
16. Remove needle swiftly										
17. Apply pressure with cotton wad or folded gauze										
18. Invert tubes with anticoagulants										
18. Remove needle before filling tube (if syringe used)										
20. Properly label specimen tubes										
21. Properly discard contaminated material										
22. Recheck puncture site and apply bandage if necessary										
23. Change gloves and wash hands										
24. Leave patient with a smile										

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	SPECIMEN COLLECTION, PRESERVATION AND TRANSPORTATION
COURSE CODE:	PHST1204
CREDITS:	3
CONTACT HOURS:	75
PREREQUISITES:	PHIP1101 Introduction to Phlebotomy
COREQUISITES:	None
SEMESTER:	II

COURSE RATIONALE

Testing blood samples is a critical role for phlebotomists. Students will therefore be informed of the importance of safe specimen collection and practices to be enforced during transportation to aid preservation and quality of samples.

COURSE DESCRIPTION

This course exposes students to the protocols applied in routine collection, preservation and transportation and preparation of routine specimens for testing. Said exposure will enable them to integrate well into the clinical laboratory team while aiding in the efficient production of quality results. They will learn about laboratory design, management and organisation, quality in the clinical laboratory, sterilisation and disinfection, safety in the laboratory and biohazardous materials.

COURSE OUTCOMES

Upon successful completion of this course, learners will be able to:

1. describe safety and quality standards applied in the clinical laboratory.
2. describe (and carry out where applicable) correct protocols for collection, preservation and transportation and preparation of routine specimens for testing.
3. explain protocols for accessioning and rejecting routine specimens.

4. relate the various types of tests performed on routine specimens in major departments of the clinical laboratory.

UNIT I: QUALITY IN THE MEDICAL LABORATORY	(6 theory + 15 practical hours)
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Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. outline the importance of following QC and QA programmes and their association with positive outcomes.
2. describe how a laboratory plan can translate to maximum and efficient output of goods and services.
3. outline how appropriate techniques for specimen collection, handling, transport, processing, management, and storage maintain specimen integrity.
4. demonstrate safety protocols employed in the laboratory.
5. describe components of a QA programme.
6. demonstrate proper procedures for hand hygiene, donning and removing PPE and entering controlled hospital environments.
7. describe standard and transmission-based precautions and identify the organisations that developed them.
8. state safety rules for laboratory and patient areas.

Content

1. Laboratory design, management, and organisation
2. Quality in the clinical laboratory
3. Sterilisation and disinfection
4. Safety in the laboratory
5. Biohazardous materials

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. state the major constituents of blood, describe the function of each formed element, and differentiate among serum, plasma, and whole blood.
2. describe correct protocols for collection, preservation, transportation, and preparation of each blood component for testing.
3. outline the various types of tests performed on different blood components in major departments of the clinical laboratory.
4. state the three major functions of cerebrospinal fluid (CSF).
5. outline distribution of CSF specimen tubes numbered 1, 2 and 3 to the appropriate laboratory sections and correctly preserve them.
6. describe the appearance of normal CSF.
7. define xanthochromia.
8. state the significance of xanthochromia.
9. describe correct protocols for collection, preservation and transportation and preparation of CSF for testing.
10. evaluate possible reasons a laboratory would reject blood and CSF specimens.
11. outline various types of tests performed on CSF in major departments of a clinical laboratory.

Content

1. The blood – components and testing
2. CSF – components and testing
3. Collection, preservation and transportation of routine and special blood samples
4. Collection, preservation and transportation of CSF samples

UNIT III: URINE, SEMEN, FAECAL AND SEROUS FLUID SPECIMENS (10 theory + 9 practical hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. outline the basic process of urine formation.
2. list three major organic and three major inorganic chemical constituents of urine.
3. describe characteristics of recommended urine specimen containers.
4. demonstrate the correct methodology for labelling urine specimens.
5. list changes that may take place in a urine specimen that remains at room temperature for more than two hours.
6. instruct patients in the correct procedure for collecting timed and midstream clean-catch urine specimens as well as specimens for drug testing.
7. describe the type of specimen needed to obtain optimal results when a specific urinalysis procedure is requested.
8. describe components of semen with regard to source and function.
9. describe the normal appearance of semen and abnormalities in appearance.
10. describe formation, function, and appearance of synovial, peritoneal and pleural fluids.
11. describe correct protocols for collection, preservation and transportation and preparation of semen, faecal and serous fluid specimens.
12. perform various types of tests on semen, faecal and serous fluid specimens in major departments of a clinical laboratory.
13. critique possible reasons a laboratory would reject semen, faecal and serous fluid specimens.

Content

1. Urine – formation, constituents, and testing
2. Faecal analysis
3. Seminal fluid – components and testing
4. Serous fluid – formation, components, and testing
5. Collection, preservation, and transportation of samples

UNIT IV: RESPIRATORY, TISSUE AND SWAB SPECIMENS (6 theory + 9 practical hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. describe the basic anatomy of the respiratory tract while stating structures of the upper and lower tract.
2. demonstrate safety protocols that apply to a microbiology laboratory.
3. describe precautions and PPE required to collect respiratory specimens.
4. perform various types of tests on respiratory, tissue and swab specimens in major departments of the clinical laboratory.
5. state possible reasons a laboratory would reject respiratory, tissue and swab specimens.

Content

1. Basic anatomy of the respiratory tract
2. Buccal swabs
3. Nasopharyngeal and throat swab
4. Sputum
5. Biopsies and tissue samples
6. Wound swabs
7. Vaginal and cervical swabs

LABORATORY EXERCISES

1. Introduction
2. Lab safety – PPE
3. Lab safety – infection control and lab accident protocols
4. Sample requisitioning and accessioning
5. Basic laboratory equipment – microscope and centrifuge
6. Sample preparation – centrifugation and aliquoting of blood components (serum)
7. Sample preparation – centrifugation and aliquoting of blood components (plasma)

8. Urinalysis – physical and chemical analysis
9. Occult faecal blood test
10. Respiratory swabs – protocols and practices
11. Gram stain
12. Lab examination

METHODS OF DELIVERY

1. Lectures
2. Discussions
3. Case studies and analysis
4. Presentations
5. Research
6. Project
7. Simulations
8. Lab exercises

METHODS OF ASSESSMENT AND EVALUATION

Tests	20%
Weekly quizzes	5%
Project	5%
Presentations	10%
Lab activities and reports	15%
Lab examination (3 hours)	5%
Final examination (2 hours)	40%
Total	100%

RESOURCE MATERIALS

Main Text

McCall, R. E., & Tankersley, C. M. (2015). *Phlebotomy essentials*. 6th ed. Lippincott Williams & Wilkins.

Supplementary Texts

Garza, D., & Becan-McBride, K. (2018). *Phlebotomy handbook: blood collection essential*. 10th ed. New Jersey: Pearson Prentice Hall.

Itatani, C., & Shipp, N. (2012). *Phlebotomy best practices: a case study approach*. 1st ed. Philadelphia: Lippincott Williams & Wilkins.

Websites

Ebscohost Databases – <http://www.ebscohost.com>

ProQuest Databases – <http://www.proquest.com>

Springer ebooks – <http://www.springer.com>

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	VITAL SIGNS AND PATIENT CHARTING
COURSE CODE:	PWVC 1201
CREDITS:	3
CONTACT HOURS:	45 (Theory)
PREREQUISITES:	3 CSEC or GCE O-Level including English A (CSEC) or English Language (GCE) and a Science Subject
COREQUISITES:	None
SEMESTER:	II

COURSE RATIONALE

This course will provide necessary training to enable competence in measuring vital signs and performing accurate and complete documentation on patients' charts.

COURSE DESCRIPTION

This course will develop students' ability to take vital signs correctly and accurately; measure temperature, pulse/heart rate, respiration, blood pressure, pain and other important health data such as height, weight, intake and output. Students will learn to accurately and concisely document findings on patients' charts.

COURSE OUTCOMES

Upon completion of this course, students will be able to:

1. describe vital signs and their importance.
2. state and understand how to accurately measure vital signs.
3. relate normal parameters or ranges of each vital sign for a healthy adult.
4. demonstrate how to collect other important health data such as height, weight, intake and output.
5. recognise medical causes/implications when vital signs are outside normal ranges.
6. identify how to correctly record/document information collected.
7. explain how information should be interpreted and used in clinical practice.

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. define homeostasis.
2. identify the parts of the body involved in regulating temperature.
3. describe how the body works to maintain temperature at certain levels; from being too hot or too cold.
4. state normal ranges for temperature in adults and common conditions that can result in temperature being outside normal ranges.
5. accurately record findings on patients' charts according to facility standards and protocols.

Content

1. Definition of homeostasis and how it affects body temperature.
2. Parts of the body involved in temperature regulation:
 - a. Hypothalamus
 - b. Skin/Integumentary system – receptors
 - c. Blood vessels – vasoconstriction/vasodilation, erector muscles
3. How the hypothalamus, skin, blood vessels, erector muscles work together to maintain the body's temperature.
4. Normal range 35.8 to 38.8 Celsius; core temperature 37 Celsius.
 - a. Parts of a thermometer
 - b. Oral temperature
 - c. Tympanic temperature
 - d. Axillary temperature
 - e. Rectal temperature
 - f. Common conditions: fever, hyperthermia, hypothermia, etc.

5. Document date, time, patient's name, how temperature taken (oral, tympanic, axilla, etc.), temperature reading accurately and completely according to proper standards.

UNIT II: PULSE/HEART RATE

(12 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. state the basic anatomy of the heart and workings of the cardiac cycle.
2. explain how the pulse/heart rate is regulated by the body.
3. identify normal ranges for pulse/heart rate in adults and common conditions that cause them to be outside normal ranges.
4. demonstrate how to competently assess pulse/heart rate.
5. compose relevant findings on patients' charts in accordance with documentation standards.

Content

1. Basic anatomy of the heart and cardiac cycle.
 - a. Heart located beneath sternum on left side of body.
 - b. Heart wall layers – epicardium, myocardium, endocardium, and pericardium sac
 - c. Heart chambers – right and left atria (upper chambers), right and left ventricles (lower chambers).
 - d. Heart valves – 2 atrioventricular valves (mitral and tricuspid) and 2 semilunar valves (pulmonic and aortic).
 - e. Cardiac cycle – flow of blood through the heart.
 - f. Blood circulation through the body.
 - g. Arterial pulses – carotid, brachial, radial, posterior tibialis pulse, dorsalis pedis pulse, femoral, popliteal.
 - h. Auscultating the apical pulse.
2. Cardiac output – heart rate x stroke volume (preload, contractility, afterload) and heart sounds.
3. Normal range 60-100 beats per minute.

- a. Radial
 - b. Brachial
 - c. Carotid
 - d. Apical
 - e. Common conditions – bradycardia, tachycardia, etc.
4. Palpate – apply pressure to pulse with index and middle fingers.
 - a. Count number of pulses/heart rate for 60 seconds or 30 seconds x 2 if heart rate is regular or 15 seconds x 4 if heart rate is regular.
 - b. Pulses are graded – 0-absent, 1+ weak, 2+normal, 3+bounding, regular and irregular rhythm.
5. Document date, time, correct patient, heart rate (radial, apical, brachial) beats per minute on chart.

UNIT III: RESPIRATIONS

(6 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. summarise the mechanics of breathing.
2. classify body parts involved in the respiratory system and the mechanics of breathing.
3. recall normal ranges for respirations per minute in adults and common conditions that causes them to be outside these ranges.
4. demonstrate how to take respiratory rate.
5. make notations of findings on patient's charts in accordance with industry standards.

Content

1. Mechanics of breathing
 - a. Inspiration (inhalation)
 - b. Expiration (exhalation)
2. Respiratory system and mechanics of breathing
 - a. Brain – respiratory centre (pons and medulla), limbic system, cerebral cortex
 - b. Central and peripheral chemoreceptors, mechanoreceptors
 - c. Phrenic nerves, intercostal nerves

- d. Lungs and diaphragm
- 3. Normal ranges 12-20 breaths per minute
 - Common conditions
 - Dyspnea
 - Tachypnea
 - Wheezing
 - Asthma
 - Chronic obstructive pulmonary disease
 - Emphysema
- 4. Observe a complete ventilatory cycle (inhalation plus exhalation) in 1 minute, watching rise and fall of person's chest or abdomen.
 - Make note of person's breathing
 - Effortless
 - Even
 - Slow
 - Rapid
 - Shallow
 - Any period of apnea
- 5. Record date, time, correct patient, respiratory rate per minute on chart.

UNIT IV: BLOOD PRESSURE

(12 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

- 1. describe causes and results of blood pressure.
- 2. distinguish between systolic and diastolic blood pressure (BP).
- 3. explain the normal ranges of BP, stages of hypertension and common conditions that impact BP.
- 4. formulate steps essential in obtaining accurate BP readings.
- 5. record findings on patients' charts.
- 6. interpret findings on patients' charts.

Content

1. Anatomy of blood vessels and how they function.
2. Systolic blood pressure (heart first contracts) and diastolic blood pressure (heart at rest).
3. Normal ranges – less than 120/80 mmHg (millimeters of mercury).
 - a. Pre-hypertension – 120/80-139/89 mmHg
 - b. Stage I hypertension – 140/90-159/99 mm/Hg
 - c. Stage II hypertension – greater than 160/100 mmHg
 - d. Common conditions:
 - Heart disease
 - Stroke
 - Myocardial infarction
 - Thyroid disease
 - Kidney disease
4. Blood pressure equipment – sphygmomanometer (cuff, manometer valve, pressure valve), stethoscope.
 - a. Positioning – sitting/lying, arm at side, palm facing up.
 - b. Locate brachial pulse in antecubical space (groove between biceps and triceps muscle, bend of elbow).
 - c. Blood pressure cuff placed 2.5 centimeters (cm) above site of brachial pulse with bladder of cuff over the artery so cuff fits evenly and securely around the arm.
 - d. Manometer at eye level, pressure valve closed by turning clockwise.
 - e. Place stethoscope over brachial pulse, hold with non-dominant hand and then place earpieces of stethoscope in ears and using dominant hand inflate cuff to 180-200mm/Hg then release valve to deflate cuff slowly and steadily (around 2-3 mmHg per second to reduce measurement errors.
 - f. Listen for first korotkoff sound – sharp thump or tap of brachial artery which indicates systolic BP – read pressure in mmHg on manometer at point this occurs.
 - g. Disappearance of all korotkoff sounds (all noises related to brachial pulses) indicates diastolic BP – read pressure in mmHg on manometer at point this occurs.
 - h. Once readings are obtained, deflate cuff completely and remove from arm.

5. Document date, time, correct systolic and diastolic readings in mmHg on patients' charts.

UNIT V: OTHER IMPORTANT HEALTH DATA

(9 hours)

Learner Outcomes

Upon successful completion of this unit, learners will be able to:

1. evaluate how blood oxygen saturation, pain, and other health data impact overall health.
2. describe how to measure vital signs.
3. interpret reading of vital signs measured in context of other vital signs.
4. identify normal parameters for blood oxygen saturation, pain, and other health data.
5. perform accurate, concise documentation of findings.

Content

1. Blood oxygen saturation, pain, height, weight, intake, and output.
2. Blood oxygen saturation – pulse oximeter:
 - a. Pain – numerical scale, Wong face scale, etc.
 - b. Height – centimetres/metres
 - c. Weight – kilograms
 - d. Intake – liquid (millilitres-ml) and meals (0%, 25%, 50%,75%, 100%)
 - e. Output – urine, emesis, wound drainage devices (ml) and faeces/stool (small, medium, large)
3. Blood oxygen saturation – 95% -100%
 - a. Pain
 - i. Onset (when began)
 - ii. Provocation/Palliation (what makes it worse/better)
 - iii. Quality – describe pain (sharp, aching, dull, etc.)
 - iv. Region/Radiation (where moves to)
 - v. Severity (scale 0-10)
 - vi. Time (how long present – intermittent, constant)
 - b. Body mass index (weight in kg/height(m)²)
 - i. Underweight (less than 18.5)

- ii. Normal (18.6 - 24.9)
 - iii. Overweight (25 - 29.9)
 - iv. Obese (greater than 30)
4. Document date, time, correct patient, data in accordance with facility protocols

METHODS OF DELIVERY

1. Lectures
2. Discussions
3. Role play
4. Videos online
5. Case study and analysis
6. Field trips
7. Presentations
8. Research
9. Project
10. Simulation

METHODS OF ASSESSMENT AND EVALUATION

1. Common coursework	
Test	50%
Field trip report	10%
2. College coursework	
Project	15%
3. Final examination	25%
Total	100%

RESOURCE MATERIALS

Main Text

McLaughlin, M. A. (2019). *Cardiovascular Care Made Incredibly Easy!* Lippincott Williams & Wilkins.

Websites

Ebscohost Databases-<http://www.ebscohost.com>

ProQuest Databases-<http://www.proquest.com>

Springer ebooks- <http://www.springer.com>

Other Resources

www.ahajournals.org

Joint National Committee- <https://sites.jamanetwork.com/jnc8>

www.khanacademy.com

Alila- <https://www.aliamedicalmedia.com>

THE COUNCIL OF COMMUNITY COLLEGES OF JAMAICA

COURSE NAME:	WASTE DISPOSAL AND DECONTAMINATION TECHNIQUES
COURSE CODE:	PHWT1201
CREDITS:	3
CONTACT HOURS:	45 (Theory)
PREREQUISITES:	None
COREQUISITES:	None
SEMESTER:	II

COURSE RATIONALE

Phlebotomy contributes to hazardous waste generated by healthcare facilities. This type of waste must be properly disposed of, and different decontamination techniques employed, to prevent harm to healthcare workers, patients, the public and the environment. It is therefore critical for phlebotomy students to have a full understanding of proper healthcare waste management. A course on waste disposal and decontamination techniques is therefore integral to a phlebotomy curriculum.

COURSE DESCRIPTION

This course will examine the safe management of waste generated by healthcare facilities, including that produced through the duties of phlebotomy. It will teach students about types of healthcare waste and risks associated with them. It will also provide guidance on how to manage healthcare waste through minimising use of, reusing and recycling materials. How to separate, store, transport, treat and dispose of healthcare waste will be covered in detail.

COURSE OUTCOMES

Upon successful completion of this course, students will be able to:

1. classify types of healthcare waste.
2. identify risks associated with same.
3. explain how waste can be managed through minimising use, reusing, and recycling.
4. describe processes of separating, storing and transporting waste.

5. explain methods of treatment and disposal of healthcare waste.

UNIT I: CLASSIFICATION OF HEALTHCARE WASTE

(8 hours)

Learner Outcomes

Upon successful completion of this unit, students will be able to:

1. define healthcare waste.
2. classify same.
3. identify the areas in a healthcare facility that produce waste.
4. describe the composition, quantities and characteristics of waste produced by healthcare facilities.

Content

1. Definition and characterisation of healthcare waste.
 - a. General definition and classification of waste
 - i. Sharps
 - ii. Infectious
 - b. Pathological
 - c. Pharmaceutical, including genotoxic
 - d. Chemical
 - e. Radioactive
 - f. Non-hazardous general waste
2. Sources of healthcare waste:
 - a. Major
 - b. Minor
3. Generation and physico-chemical characteristics of healthcare waste.

Learner Outcomes

Upon successful completion of this course, students will be able to:

1. describe the main types of hazards associated with healthcare waste.
2. identify who are at risk from healthcare waste and discuss public health and environmental risks of healthcare waste.

Content

1. Overview of hazards
 - a. Hazards from:
 - i. infectious waste and sharps
 - ii. chemical and pharmaceutical waste
 - iii. genotoxic waste
 - iv. radioactive waste
 - v. healthcare waste treatment methods
 - b. Persons at risk from healthcare hazards
2. Public health impact of healthcare waste:
 - a. Impact of
 - i. infectious waste and sharps
 - ii. chemical and pharmaceutical waste
 - iii. genotoxic waste
 - iv. radioactive waste
3. Survival of pathogenic microorganisms in the environment.
4. The need for further research and epidemiological surveys.

UNIT III: HEALTHCARE WASTE MANAGEMENT – PART I

(6 hours)

Learner Outcomes

Upon successful completion of this course, students will be able to:

1. explain the waste management hierarchy.
2. examine options available to minimise waste.
3. outline best practices of waste management, including reusing and recycling.

Content

1. Healthcare waste minimisation, reuse and recycle
 - a. Waste management hierarchy
 - b. Waste minimisation
 - c. Environmentally preferable purchasing
 - d. Green procurement – recycling symbols for plastics
 - e. Safe reuse
 - f. Recycling and recovery
 - g. Environmental management systems

UNIT IV: HEALTHCARE WASTE MANAGEMENT – PART II

(10 hours)

Learner Outcomes

Upon successful completion of this course, students will be able to:

1. outline the importance of waste segregation including appropriate containers to be used based on colour codes, labelling and proper placing of containers.
2. assess storage and transport of healthcare waste including handling and storage methods and mitigation measures to reduce risks for human health, animals, and the environment.
3. examine existing regulations on transport of waste outside of healthcare facilities.

Content

1. Segregation, storage, and transport of healthcare waste
 - a. Guiding principles

- b. Segregation systems
 - i. Waste containers, colour codes and labels
 - ii. Beyond basic segregation (non-hazardous and hazardous waste)
 - iii. Waste containers – specifications and siting
 - iv. Setting and maintaining segregation standards
- 2. Collection, storage, and transport of healthcare waste:
 - a. Collection within healthcare facilities
 - b. Interim storage in medical departments
 - c. Onsite transport of waste
 - i. General requirements
 - ii. Transport trolleys
 - iii. Routing
 - d. Central storage inside healthcare facilities
 - i. General requirements
 - ii. Hazardous waste storage
 - iii. Layout of waste storage areas
 - iv. Documentation of the operation of storage places
 - e. Offsite transport of waste
 - i. Logistic staff
 - ii. Vehicle requirements
 - iii. Labelling of the transport vehicle
 - iv. Cleaning of container and vehicle
 - v. Transport documentation
 - f. Minimum approach to segregation, storage and transport
- 3. Regulations in Jamaica and the Caribbean on transport of waste outside of health facilities.
 - a. National Policy for the Environmentally Sound Management of Hazardous Wastes (Jamaica – awaiting parliamentary approval).
 - b. Health Facilities Infection and Control Policies and Procedures Manual, Jamaica.
 - c. (The management of waste from healthcare facilities).

- d. Infection Prevention and Control Policies and Guidelines for Healthcare Services, Ministry of Health, Trinidad and Tobago.
 - i. Sharps
 - ii. Safe waste disposal
 - iii. Disinfection and sterilisation
 - iv. Waste management

UNIT V: HEALTHCARE WASTE MANAGEMENT – PART III

(13 hours)

Learner Outcomes

Upon successful completion of this course, students will be able to:

1. summarise the types of waste treatment technologies.
2. describe at least two disposal methods for waste.
3. compare forms of treatment technologies available for healthcare waste.
4. explain how to properly handle and dispose of sharps waste.

Content

1. Treatment and disposal methods
 - a. Overview of waste treatment technologies
 - i. Thermal processes
 - ii. Chemical processes
 - iii. Irradiation technologies
 - iv. Biological processes
 - v. Mechanical processes
 - b. Suitability of treatment methods for infectious waste
 - c. Steam treatment technologies
 - i. Autoclaves
 - ii. Integrated steam-based treatment systems
 - d. Microwave treatment technologies
 - e. Dry-heat treatment technologies

- f. Chemical treatment technologies
 - i. Internal shredding of waste
 - ii. Chemical disinfectants
 - iii. Microbial resistance
 - iv. Alkaline hydrolysis
- g. Incineration
 - i. Combustion
 - ii. Pyrolysis and gasification
 - iii. Required waste characteristics
 - iv. Types of incinerators for healthcare waste
 - v. Environmental control of incinerators
 - vi. Dust removal
- h. Encapsulation and inertisation
- i. Emerging technologies
- j. Application of treatment and disposal methods to specific waste categories
 - i. Sharps
 - ii. Anatomical, pathological and placenta waste and contaminated animal carcasses
 - iii. Pharmaceutical waste
 - iv. Cytotoxic waste
 - v. Chemical waste
 - vi. Waste containing heavy metals
 - vii. Land disposal – municipal and other external disposal sites

2. Management of sharps waste

- a. Preventing sharps exposure/injuries
- b. Preparing for sharps procedures
- c. Preparing equipment and applying safe work techniques
- d. Correct collection, storage, and disposal of sharps
- e. Options for sharps waste management
- f. Treatment and reporting of needlestick/exposure injuries

- g. Preparing for home and mobile visits

METHODS OF DELIVERY

1. Lectures
2. Presentations
3. Videos
4. Discussions
5. Case studies
6. Projects/Research
7. Group work
8. Field trips

METHODS OF ASSESSMENT AND EVALUATION

1. Tests/Quizzes	10%
2. Assignments	15%
3. Project/Research paper	15%
4. Final examination	50%
5. Class participation	10%
Total	100%

Class participation will be evaluated based on students' involvement in discussions and interaction through asking and answering questions.

The goal of the project/research paper is to evaluate students' understanding and interpretation of the content of the course, such as various technologies available for treatment of healthcare waste and the importance of proper handling and disposing of sharps waste. It will also help to develop critical research, writing and presentation skills.

RESOURCE MATERIALS

Required

World Health Organization (2014). *Safe management of wastes from health-care activities*; edited by Y. Chartier et al. – 2nd ed. Published 2014. Accessed June 14, 2021.
https://apps.who.int/iris/bitstream/handle/10665/85349/9789241548564_eng.pdf?sequence=1.
(PDF attached).

World Health Organization (2014). *Global Healthcare Waste Project, Module 17 Management of Specific Infectious Wastes*. Accessed June 14, 2021.
https://www.who.int/water_sanitation_health/facilities/waste/module17.pdf. **(PDF attached).**

Primary Healthcare Limited. *Sharps Handling and Disposal*. Published February 2016. Accessed June 14, 2021.
https://www.google.com/search?q=laverty+sharpshandling+and+disposal&sxsrf=ALeKk00lZUpK8yf_42T6NgNAdA43DDIuUA%3A1623684726539&ei=dnbHYIq5IOSOggezyJ3wCA&oq=laverty+sharpshandling+and+disposal&gs_lcp=Cgdnd3Mtd2l6EAM6BwgAEcQsAM6BwgjELACECc6BAgAEA06BggAEA0QHjoICAAQCBANEb5QvM0IWP7dCGCw4whoAXACeACAAcQCIAHoB5IBBTguMy0xmAEAoAEBqgEHZ3dzLXdpesgBCMABAQ&scient=gws-wiz&ved=0ahUKEwiKzOj6uJfxAhVkh-AKHTNkB44Q4dUDCA8&uact=5#. **(PDF attached).**

Government of Jamaica (2018). *National Policy for the Environmentally Sound Management of Hazardous Waste*. **(Policy to include the Medical Waste Management Policy and is currently before Parliament for approval).**
https://megjc.gov.jm/docs/policies/august_2018_national_hazardous_waste_policy.pdf.

Ministry of Health and Wellness, Jamaica. *Health Facilities Infection Control – Policies and Procedures Manual, Jamaica*. **(Section VII attached).**

Ministry of Health, Republic of Trinidad and Tobago. *Infection Prevention and Control Policies and Guidelines for Health Care Services*, second edition, June 2011. **(PDF attached).**

Additional Reading

World Health Organization (2019). *Overview of technologies for the treatment of infectious and sharps waste from healthcare facilities*. Published 2019. Accessed June 14, 2021.
<https://apps.who.int/iris/bitstream/handle/10665/328146/9789241516228-eng.pdf>. **(PDF attached).**

US Department of Labour, Occupational Safety and Health Administration. *Disposal of Contaminated Needles and Blood Tube Holders Used for Phlebotomy – Safety and Health Information Bulletin*. Accessed June 14, 2021. **(PDF attached).**

Websites

Ebscohost Databases – <http://www.ebscohost.com>

ProQuest Databases – <http://www.proquest.com>

Springer ebooks – <http://www.springer.com>

UC San Diego, Biosafety: <https://blink.ucsd.edu/safety/research-lab/biosafety/decontamination/index.html>