BABCOCK UNIVERSITY

COURSE OUTLINE TEMPLATE PREPARED BY THE AVP, INSTITUTIONAL EFFECTIVENESS

SCHOOL: PUBLIC AND ALLIED HEALTH

DEPARTMENT: MEDICAL LABORATORY SCIENCE

SEMESTER /SESSION: FIRST SEMESTER/ 2017-2018

COURSE CODE AND TITLE: MLSP 505/ CHEMICAL PATHOLOGY II (CARBOHYDRATE, AMINO ACIDS AND LIPIDS)

DAY OF CLASS: TUESDAY

NO OF UNITS: 3 CREDITS

VENUE FOR CLASS: A006

TEACHER'S: NAMES- ADEJUMO, EN; AKINLEYE, WA; OMODIALE, PE AND ADEDIJI, I

LECTURE HOURS: 2-4.50PM

TELEPHONE NO: 07033689407; 08101207348; 0803436083 08030410475

OFFICE ADDRESSES: C101; B009; C102 B009

(UNIVERSITY SCIENCES COMPLEX)

EMAIL ADDRESSES:

OUR VISION STATEMENT

A first-class Seventh-day Adventist institution, building servant leaders for a better world

OUR MISSION STATEMENT

Building leadership through Christian education; transforming lives, impacting society for positive change

To achieve our mission, we are committed to:

- Achieving excellence in our teaching, research program, and service delivery
- Imparting quality Christian education
- Instilling Christ-like character to the members of our Community

OUR CORE VALUES

- Excellence -Our Culture
- Integrity -Our Promise
- Accountability -Our Moral
- Servant Leadership -Our Strength
- Team Spirit -Our Dignity
- Autonomy and Responsibility -Our Passion
- Adventist Heritage -Our Commitment

OUR PHILOSOPHY

Babcock University's philosophy is anchored on the harmonious development of the intellectual, physical, social, and spiritual potentials of our students, inspiring stable and noble character needed for effective leadership and service in the society.

CORPORATE IMAGE STATEMENT: A center of excellence for character development and scholarship; a socially responsive, responsible, and accountable institution in matters of commitment and action.

COURSE DESCRIPTION: AS DESCRIBED IN THE BULLETIN

Carbohydrate metabolism and disorder. Pathophysiology of diabetes mellitus. Diabetic ketoacidosis, Hyperosmolar non ketotic coma, lactic acidosis, Glycogen storage diseases. Insulinoma. Diagnostic criteria and laboratory investigations. Fasting Plasma glucose, random plasma glucose, glucose tolerance test, pancreatic hormones and glycosylated hemoglobin. Lipids, lipoproteins and apoproteins structure, composition and function .Intravascular metabolism and catabolism of lipoproteins, storage diseases. Cardiovascular function tests. Recent advances in the diagnosis of lipids disorders. Plasma proteins in health and diseases. Definition, cause. Investigation and significance of Para protein & Bence-Jones proteinuria. Fractionalization of proteins. Protein electrophoresis in health and diseases. Protein degradation. Metabolic disorders and regulation of amino acid metabolism.

COURSE CONTENT: The course will dwell on the metabolism of Carbohydrate, Lipids and proteins in health and disease conditions. It will emphasize their biochemical functions, the mechanisms regulating their metabolism, and their role in chemical pathology. It will also deal with issues about the various laboratory investigations required for the diagnosis of associated diseases such as cardiovascular disease, diabetes mellitus and Renal diseases.

COURSE OBJECTIVES: Upon completion of this course, the student should be able to:

1. Discuss the dynamic and complementary nature of God the father, Son and Holy spirit from the interactive role of these 3 major macromolecules in human metabolism.
2. Describe the structures, properties, classifications, and general characteristics of carbohydrates, proteins and lipids
3. State and discuss the functions of carbohydrates, proteins and lipids in the human body
4. Explain the common disorder of carbohydrates, proteins and lipids metabolism
5. Describe various laboratory methods for the analysis of carbohydrates, proteins and lipids and their metabolites in human samples/specimens.
6. Assay human samples/ specimens for carbohydrates, proteins, lipids and their metabolites employing various laboratory methods.

REQUIRED TEXTBOOKS/JOURNALS:

1) A new short textbook of chemical pathology, 5th edition. D,.N. Baron,; J.T. Whicher; K.E. Lee.
2) Clinical biochemistry and metabolic medicine. 8th edition.martin .A.Crook. Hodder and Stoughton Ltd.
3) Fundamentals of clinical chemistry. 6th edition. By Teizt; Edited by Carl. A Burtis, Edward. R. Ashwood, David. E. Brune
4) Principles of Biochemistry (3rd edition). Donald j. Voet; Judith G. Voet; and Charlotte W. Pratt.WS
5) District Laboratory Practice in Tropical Countries (Part 1). 2nd edition . Cheesbrough .M. Cambribridge University press.
6) Medical laboratory science, Theory and Practice.1st edition. Kolhatkar. A.Tata; Ochei. J McGraw-hill Publishers.

COURSE REQUIREMENTS:

CLASS ATTENDANCE: - "Every student is required to attend classes regularly and punctually, unless ill or prevented by some recognized emergency. Students who absent themselves from class for more than three weeks during the semester shall merit an F grade. Authorized leave of absence from campus does not excuse the student from classes, or relieve the student of the required course work' *(BU Academic Bulletin 2012-2015 p.13).*

PARTICIPATION: -Students are to actively engage in topic discussion and sharing of ideas in class.

TARDINESS/CONDUCT OF STUDENTS IN CLASS: - Lateness to class is unacceptable; students are not allowed to operate their cell phones, iPods and other electronic mobile gargets during classes, except with the permission of the teacher. Eating and chewing off bubble gums and drinking (water exempted) is also not allowed except with the permission of the teacher. Very importantly, students are required to dress in compliance with the university dress code and wear their identity cards while in class.

SHORT DEVOTIONALS/PRAYER: - Spiritual nurture is a part of whole person development, and team spirit is our strength; thus, every student is required to participate in the devotional exercise and prayer in class.

SUBMISSION OF ASSIGNMENT: All assignments whether as individual or group work **must** be turned in before the set deadline.

LATE ASSIGNMENTS: Assignments could be turned in earlier, but not later than the set deadline.

GUIDELINE FOR WRITTEN WORK:

i. All quiz, assignments and mid semester answer scripts must bear your Matriculation number **ONLY** as means of identification. Names are not allowed.
ii. Always include the course title, course code, and date of submission on your scripts.
iii. Follow any other provided instructions.

ACADEMIC INTEGRITY/HONESTY: "Babcock University has a zero tolerance for any form of academic dishonesty. Morally and spiritually, the institution is committed to scholastic integrity. Consequently, both students and staff are to maintain high, ethical Christian levels of honesty. Transparent honest behavior is expected of every student in all spheres of life. Academic dishonesty include such things as plagiarism, unauthorized use of notes or textbooks on quizzes and examinations, copying or spying the test or paper of another student (formal or take-home), talking to another student during examinations. Academic matter would automatically result in a failing grade for the examination, and suspension, or outright dismissal from the university. Academic dishonesty issues are referred to SPEAM (Senate Panel on Examination and Academic Misconduct) who investigates and makes recommendations to Senate. Penalties for examination and academic misconduct are spelt out in the *student's handbook* and in other regulations as published from time to time" *(BU Academic Bulletin 2012-2015 p.18).*

GRIEVANCE PROCEDURE

"Students who believe that their academic rights have been infringed upon or that they have been unjustly treated with respect to their academic program are entitled to a fair and impartial consideration of their cases. They should do the following to effect a solution:

1. Present their case to the teacher(s) concerned

2. If necessary, discuss the problem with the Head of Department

3. If agreement is not reached at this level, submit the matter to the School Dean

4. Finally, ask for a review of the case by the Grievance Committee

5. A fee is charged for remarking of scripts. If a student's grievance is upheld after an external examiner has remarked the script, the grade would be credited to the student. The lecturer will be given a letter of reprimand and will be asked to refund the fees to the student. If the student's grievance is not sustained, the student will be given a letter of reprimand and the original grade retained" *(BU Academic Bulletin 2012-2015 p.18).*

TEACHING/LEARNING METHODOLOGIES: We will employ different strategies for teaching. However, we would promote interactive strategies, and there integration of faith and BU core values in the learning process.

COURSE ASSESSMENT/EVALUATION

Continuous Assessment:

Class Attendance: 5%}

Quizzes & Tests: 10%}

Assignments: 10%} = 40%

Mid-Semester Exam: 15%}

Final Semester Exam: 60%

GRADE SCALE

Currently, the 5-pointgrading system adopted by the University Senate translates as follows:

Grades	Marks-Quality	Range Points	Definition
A	80-100	5.00	Superior
B	60-79	4.00	Above Average
C	50-59	3.00	Average
D	45-49	2.00	Below Average
E	40-44	1.00	Pass
F	0-39	0.00	Fail

INCOMPLETE GRADE: An incomplete grade may only be assigned to a student upon request, due to an emergency situation that occurred within that semester, which prevented completion of an/some assignments, quizzes, or examination. Such a student would complete a contract form, obtainable from the Registrar, after agreement with the teacher. The form must be signed by the teacher, the student, the HOD, the dean, the Registrar, and the Senior Vice President (SVP) before contract begins. The original copy of the incomplete form will be sent to the Registrar with copies to the teacher, the student, the HOD, the dean, and the SVP. An incomplete grade (I) reverts to the existing grade if contract is not completed by the end of the following semester (including summer semester, except for examinations), *(BU Academic Bulletin 2012-2015 p. 20).*

FURTHER READINGS:

STUDENTS WITH DISABILITY

"Babcock University seeks to provide a conducive environment for optimal living and learning experience. While the university is working towards facilities that accommodate persons with

disabilities, provisions will be made for students with disabilities under the following conditions. Students with disabilities are to:

a. Report to Student Support Services for assessment, and obtain a clearance/recommendation at the commencement of the semester or as soon as disabling incidence occurs
b. Show the clearance/recommendations to relevant university officials at the commencement of the semester or as soon as disabling incidence occurs
c. Maintain ongoing contact with Student Support Services" *(BU Academic Bulletin 2012-2015 p. 20).*

COURSE OUTLINE FOR MLSP 505- 2017/2018 SESSION

DATE	TOPIC	CLASS ACTIVITIES	ASSIGNMENTS DUE
Tuesday,Sept.5, 2017	**Discussion of course outline** **Carbohydrate metabolism in health including the role of hormones.- Adediji, I.O**	**1 hour practical demonstration:** **Qualitative detection of reducing substances; Use of Benedict's reagent, use of clinistix, clinitest tablet and quantitative estimation of glucose (FBS,RBS,2HPP, OGTT)**	**Write on intermediary metabolism** **Submission deadline 14/09/17**
Tuesday,Sept.12, 2017	**Hypoglycaemia in paediatrics and adults,types, causes and laboratory diagnosis** **- Adediji, I.O**	**Interactive class session involving power point presentation, questions and answers on the topic of discussion**	
Tuesday,Sept.19, 2017	**Lipids, lipoproteins and apolipoproteins: their structure, composition, functions, metabolism, and catabolism**. **-Omodiale, P.E**		
Tuesday,Sept.26, 2017	**Lipid storage diseases, atherosclerosis and other lipid related cardiovascular disorders.** **-Omodiale, P.E**		
Tuesday Oct. 3, 2017	**Plasma proteins in health, types, functions and importance** **– Adejumo, EN**	**Discussion/ oral quiz: What are the constituents of plasma proteins?**	**In a tabular form, outline the principle and reference ranges of various methods for determination of plasma proteins.** ****Submission deadline: 12/10/17**

Tuesday Oct. 10, 2017	**Pathophysiology of diabetes mellitus, diabetic ketoacidosis, hyperosmolar non ketotic coma, lactic acidosis, glycogen storage diseases, Insulinoma and others.** **-Akinleye, WA**	**1 hour practical session: Oral glucose tolerance test**	
Tuesday Oct.17, 2017	**MID SEMESTER EXAMINATION**		
Tuesday Oct. 24,2017	**Laboratory specimen and test for disorders of carbohydrate metabolism including fasting plasma glucose, random plasma glucose, whole blood glucose, glucose tolerance test.** ****Combined Lecture and practical session I** **-Akinleye, WA**	** **1 hour practical session: The use of calibration curve in the determination of plasma glucose.**	
Tuesday Oct 31,2017	**Non protein Nitrogen- Urea and creatinine.** ****Combined Lecture and practical session II** **- Adediji, IO**	** **1 hour practical session : Urea and or Creatinine clearance.**	
Tuesday Nov.7,2017	**Laboratory specimen and methods of investigations for disorders of lipid and lipoprotein metabolism. including recent advances in the diagnosis of lipid disorders .** ****Combined Lecture and practical session III** **- Omodiale, PE**	** **1 hour practical session: Fasting lipid profile assay.**	
Tuesday Nov. 14,2017	**Plasma proteins in disease , Laboratory specimen and tests including investigation of paraproteins, Bence jones protein, Proteinuria, protein electro-phoresis** ****Combined Lecture and practical session IV** **-Adejumo, EN**	****1 hour practical session; The use of calibration curve in the determination of plasma protein.**	**Write-up on Practical session; The use of calibration curve in the determination of plasma protein.** **Submission deadline: Nov. 20, 2017**
Tuesday Nov. 21,2017	**Students' Presentation on the role of the laboratory in the diagnosis and management of disorders of carbohydrate, lipids and proteins** **- Akinleye, WA**	**Presentations by groups.**	
Tuesday Nov 28, 2017	**REVISION**		
Tuesday, Dec.5, 2017	**FIRST SEMESTER EXAMINATIONS IN PROGRESS; BEST WISHES!**		

NOTE: IT IS COMPULSORY FOR EACH STUDENT TO PURCHASE AT LEAST ONE OF THE RECOMMENDED TEXTBOOKS.