



Organic Chemistry Course Specifications (2012-2013)

Program(s) on which the course is given:	BVSc	
Department offering the program:	---	
Department offering the course:	Biochemistry	
Major or Minor element of programs:	Major	
Academic year /Level:	1 st Year	2 Semesters
Date of specification approval:		

A. BASIC INFORMATION

Title: Organic Chemistry	Code: 1ABIO,1BBIO				
Hours:					
Lectures	2 hrs/week	Practical	2 hrs/week	Total	120 hrs

B. PROFESSIONAL INFORMATION

1. Overall aims of the course:

- Explore & study the family of organic compounds called hydrocarbons
- Knowledge: about physicochemical properties of solution, colloidal state, law of mass action, osmosis, surface tension, acidity and alkalinity and the PH values and its determination .
- Study the structure and function of different types of bacterial, plant or animal cells, cell organelles, cell membrane and techniques to separate the cell organelles .
- The previous courses give a good introduction to study chemistry of naturally occurring biomolecules e.g. carbohydrates, lipids, proteins, nucleoproteins and other bioactive molecules and also study their building blocks monomers and polymers structure and other properties that full-fill their functions. This course intends also to study the structure and functions of vitamins and co-enzymes. This course intends also to study the important aspects of molecular biology and biotechnology.

2. Intended Learning Outcomes (ILOs) of the Course:

a. Knowledge and Understanding:

- a1 Understand structures of aliphatic and aromatic hydrocarbons, Alcohols, Phenols, Ether, Aldehydes, Ketons, Carboxylic acids, Ester and Amines.
- a2 Know the physicochemical properties of solution, colloidal state, law of mass action, osmosis, surface tension, acidity and alkalinity and the PH values and its determination
- a3 Know the structure and function of different types of cells either bacterial, plant or animal cells, cell organelles, cell membrane and techniques to separate the cell

- organelles.
- a4 Know structures and function of carbohydrates lipids proteins, nucleoproteins, , and vitamins and co-enzymes
 - a5 Know the important aspects of molecular biology and biotechnology.
 - a6 Deeply correlate the properties of each molecules and their function
 - a7 Full-fill the relationship between the structure and function of each molecules

b. Intellectual Skills: The students demonstrate the ability (with limited reliance on guidance) to:

- b1 Highlight important clinical research questions stemming from a case or patient interaction.
- b2 Evaluate scientific/clinical information and critically analyze conflicting data and hypotheses.
- b3 Recognize and evaluate the relationship between evidence, audit and observed variation in clinical practice
- b4 Highlight the important clinical problem from case interaction and utilizing available data
- b5 Choose and apply appropriate quantitative and qualitative methodologies.
- b6 Exhibit creativity or resource fullness in their professional learning, scientific endeavour and clinical practice

c. Professional and Practical Skills: The students will be able to detect and characterize different molecules. He /she should be able (with limited reliance on guidance) to:

- c1 Use appropriate laboratory wares & equipments safely and competently.
- c2 Work separately as well as in team work with maximum benefit from the place and minimum loss or lab ware deterioration.
- c3 Extract the results; conclude comments, present data confidently.
- c4 Convince others with purpose of the work, the reliability of the results during lab meeting seminars.

d. General and Transferable Skills: The students will able to:

- d1 Conduct themselves in a professional manner with regard to the veterinarian professional and legal responsibilities and understanding and apply the ethical codes as set out in general organization of veterinary services (GOVS).
- d2 Work effectively as a member of a team in the delivery of services to community.
- d3 Communicate effectively with the public, colleagues and appropriate authorities
- d4 Utilize communicating skills, have access to the internal and retrieve information
- d5 Understanding career paths.
- d6 Produce reports in a form that is satisfactory and understandable.
- d7 Perform research and solve any emerging disease problem
- d8 Perform research on common disease problems in the surrounding domestic and wild animals in the community

3. Contents:

1st Semester			
Topic	No. of hours	Lectures	Practical
▪ Hydrocarbones, Alcohol, Phenols, Aldhyde, Ketones, Carboxylic acids, Ether, ester and Amines	12	6	6

▪ Physicochemical properties of solution, colloidal state, law of mass action, osmosis, surface tension, acidity and alkalinity, PH values and determination	12	6	6
▪ Enzymes	8	6	2
▪ Structure, function and chemistry of carbohydrates	14	6	8
▪ Structure, function and chemistry of lipids	14	6	8
2nd Semester			
▪ Structure, function and chemistry of proteins	16	8	8
▪ Structure, function and chemistry of nucleoproteins	8	4	4
▪ Structure, function and chemistry of vitamins and co-enzymes	16	8	8
▪ Molecular biology and biotechnology	20	10	10
Total	120	60	60

4. Teaching and Learning Methods:

- 4.1 Lectures
- 4.2 Information collection, books, internet, periodicals.
- 4.3 Research assignments
- 4.4 Practical
- 4.5 Field visits
- 4.6 Discussions

5. Student Assessment Methods:

Exam		
5.1	Written Mid-term	Multiple choice questions and short answer questions. To assess the ability to understand and remember knowledge, and intellectual skills
5.2	Written Final-term	To assess the ability to understand and remember knowledge, and intellectual skills
5.3	Practical Final-term	Including case studies. To assess professional and practical skills
5.4	Oral Final-term	To assess skills of discussion

Assessment Schedule (in each semester):

	Exam	Week
Assessment 1	Written Mid-term	8 th
Assessment 2	Written Final-term	16 th
Assessment 3	Practical Final-term	16 th
Assessment 4	Oral Final-term	16 th

Weighing of assessments

	Exam	Per Semester (%)	Total (%)
Assessment 1	Written Mid-term	10	20
Assessment 2	Written Final-term	25	50
Assessment 3	Practical Final-term	10	20
Assessment 4	Oral Final-term	5	10
Total		50	100

6. List of References:

6.1. Course Notes:

- Department Notes (Printed)

6.2. Essential Books:

- Freifelder, D. (1982): Physical biochemistry: Application to biochemistry and molecular biology, Freeman

6.3. Recommended Books:

- Freifelder, D. (1982): Physical biochemistry: Application to biochemistry and molecular biology, Freeman

6.4. Periodicals, websites, etc

- Academic departments on the web

7. Facilities Required for Teaching and Learning

- Fine chemicals, advanced laboratory wares & animals housing facilities with high technical instrumentations capable for accommodating the number of students
- Access to internet with the journals site Subscription
- Audio visual aids & Virtual reality facilities
- Based learning facilities

Course Coordinator: Dr. A.H. El-Far

Head of Department: Prof. Dr. U.E. Mahrous

Date: