



UNIVERSITI TEKNOLOGI MARA

BCM312: LABORATORY METHODS IN BIOCHEMISTRY

Course Name (English)	LABORATORY METHODS IN BIOCHEMISTRY APPROVED
Course Code	BCM312
MQF Credit	2
Course Description	The objective of this course is to expose the students to techniques commonly used in a biochemistry lab. Students would learn how to use pipettes, prepare buffer and measurement of pH, calculate dilution, and use spectrophotometry to calculate concentrations. selected experiments covering the study on the properties of carbohydrates, lipids and proteins will be conducted. In understanding of biochemical techniques including protein fractionation, electrophoresis of proteins and ability to calculate enzyme kinetic values.
Transferable Skills	Reflective Learner, Effective Communicator, Resourceful and Responsible
Teaching Methodologies	Lab Work, Discussion
CLO	CLO1 Demonstrate the ability to conduct basic biochemical laboratory techniques CLO2 Verbally and in writing, discuss and report to peers the scientific investigations and data interpretation
Pre-Requisite Courses	No course recommendations
Topics	
1. Estimation of reducing sugar 1.1) n/a	
2. Gel Filtration Chromatography 2.1) n/a	
3. Colorimetric tests for Carbohydrates 3.1) n/a	
4. Thin Layer Chromatography 4.1) n/a	
5. The Saponification Value 5.1) n/a	
6. Acid value 6.1) n/a	
7. Qualitative Tests for Amino acids 7.1) n/a	
8. Tests for proteins 8.1) n/a	
9. Biuret assay for proteins 9.1) n/a	
10. Spectrophotometric and pH measurement 10.1) n/a	
11. Lowry assay for protein 11.1) n/a	
12. Determination of Michaelis constant K_M and the maximal velocity V_{max} 12.1) n/a	

13. Lowry assay for proteins 13.1) n/a
14. Effect of α-amylase on starch 14.1) n/a
15. SDS Polyacrylamide Electrophoresis 15.1) n/a

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Quiz	Quiz 1	10%	CLO1 , CLO2
	Quiz	Quiz 2	10%	CLO1 , CLO2
	Test	Test 2	20%	CLO1 , CLO2
	Test	Test 1	20%	CLO1 , CLO2
	Written Report	The report accordingly to the lab practical	40%	CLO1 , CLO2

Reading List	Recommended Text	<ul style="list-style-type: none"> • Boyer, R. 2006, <i>Concept in Biochemistry (3rd Ed.)</i>, Ed., , Wiley [ISBN:] • Campbell, M.K., and Farrell, S.O. 2012, <i>Biochemistry (7th Ed.)</i>, Ed., , Thomson Brooks/Cole [ISBN:]
Article/Paper List	This Course does not have any article/paper resources	
Other References	<ul style="list-style-type: none"> • Books Voet, D.J., Voet, G.V., and Pratt, C.W. 2008, <i>Principle of Biochemsitry</i>, Ed Wiley • Books McKee, T. And McKee, J.R. 2003, <i>Biochemistry The Molecular Basis of Life</i> , MCGraw-Hill, UK 	