



UNIVERSITI TEKNOLOGI MARA

BCM202: LABORATORY METHODS IN BIOCHEMISTRY

Course Name (English)	LABORATORY METHODS IN BIOCHEMISTRY APPROVED
Course Code	BCM202
MQF Credit	2
Course Description	This course emphasized students the techniques commonly used in a biochemistry. Techniques such as how to use pipettes, prepare buffer and measurement of pH, calculate dilutions and use spectrophotometry to calculate concentrations. Students will also be introduced to the selected experiments covering the study on the properties of carbohydrates, lipids and proteins. In addition, students should be able to understand the basic biochemical techniques including protein fractionation, electrophoresis of proteins and ability to calculate enzyme kinetic values. The course is supplemented by laboratory demonstration and presentations. This will ensure that students have the knowledge and skills in conducting the experiment.
Transferable Skills	Reflective Learner, Effective Communicator, Resourceful and Responsible
Teaching Methodologies	Blended Learning, Lab Work, Discussion, Presentation
CLO	CLO1 Discuss the ability to conduct basic biochemical laboratory techniques in biochemistry lab practical CLO2 Demonstrate the scientific investigations and data interpretation through verbally and in writing in biochemistry lab practical CLO3 Express laboratory task on dealing with the method in biochemistry lab practical through literature
Pre-Requisite Courses	No course recommendations
Topics	
1. Colorimetric tests for Carbohydrates 1.1) n/a	
2. Thin Layer Chromatography 2.1) n/a	
3. The Saponification Value 3.1) n/a	
4. Acid Value 4.1) n/a	
5. Qualitative Tests for Amino acids 5.1) n/a	
6. Tests for proteins 6.1) n/a	
7. Spectrophotometric and pH measurement 7.1) n/a	
8. Lowry Assay for protein 8.1) n/a	
9. Biuret Assay for protein 9.1) n/a	
10. Estimation of reducing sugar 10.1) n/a	

11. Effect of α-amylase on starch 11.1) n/a
12. Determination of Michaelis constant K_M and the maximal velocity V_{max} 12.1) n/a
13. SDS Polyacrylamide Electrophoresis 13.1) n/a
14. Gel Filtration Chromatography 14.1) n/a

Assessment Breakdown		%	
Continuous Assessment		100.00%	

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Assignment/Presentation	10%	CLO3
	Lab Exercise	Lab exercise and written Reports	60%	CLO2
	Test	Lab 1 to 3	15%	CLO1
	Test	Lab 4 to 6	15%	CLO1

Reading List	Recommended Text
	<ul style="list-style-type: none"> • Campbell, M.K., and Farrell, S.O. 2012, <i>Biochemistry</i>, 7 Ed., Thomson Brooks/ Cole. [ISBN: 978-1-111-425] • Boyer, R. 2006, <i>Concepts in Biochemistry</i>, 3 Ed., Wiley.

Article/Paper List	
	This Course does not have any article/paper resources

Other References	
	<ul style="list-style-type: none"> • Books McKee, T. and McKee, J.R. 2003, <i>Biochemistry – The Molecular Basis of Life</i>, McGraw-Hill. • Books Voet, D.J., Voet, G.V., and Pratt, C.W. 2008, <i>Principles of Biochemistry (3rd Ed.)</i>, Wiley.