



Academic Course Specification Form

استمارة توصيف المقرر الأكاديمي

القسم الخاص بالطالب Section Concerning the Student

1. Course Code:	BIOLS 472	1. رمز المقرر:
2. Course Title	Human Nutrition and Metabolism	2. اسم المقرر:
3. College:	Science	3. الكلية:
4. Department:	Biology	4. القسم:
5. Academic Program:	Bachelor of Science in Biology	5. البرنامج الأكاديمي:
6. Course Credits:	3-0-3	6. عدد الساعات المعتمدة:
7. Course NQF Level:	8	7. مستوى المقرر وفقاً للإطار الوطني للمؤهلات:
8. Notional Hours:	140	8. عدد الساعات الافتراضية:
9. NQF Credits:	14	9. عدد الساعات المعتمدة للمقرر وفقاً للإطار الوطني للمؤهلات:
10. European Credit Transfer System (ECTS) credits	7	10. عدد الساعات للمقرر بالنظام الأوروبي
11. Prerequisite:	BIOLS 315 & BIOLS 372	11. المتطلب السابق للمقرر:
12. Lectures Timing & Location:		12. وقت المحاضرة ومكانها:

13. General Mode of Teaching and Learning	Traditional تقليدي	13. النمط العام للتعليم والتعلم:
14. Course Coordinator:		14. منسق المقرر:
15. Course Instructor:		15. مدرّس المقرر:
16. Office Hours and Location:		16. الساعات المكتبية ومكانها:
17. Instructor's Email:		17. البريد الإلكتروني لمدرّس المقرر:
18. Academic Year:		18. السنة الأكاديمية:
19. Semester:		19. الفصل الدراسي:
20. Textbook(s):	20. الكتب الدراسية للمقرر:	
Bender, D.A., & Cunningham, S.M.C. 2021. Introduction to Nutrition and Metabolism, 6 th Edition. CRC Press.		
21. References:	21. المراجع:	
Any human nutrition and metabolism books available in library Recent Published literature reviews in nutrition metabolism and chronic diseases		
22. Other Learning Resources Used (e.g. e-learning, field visits, periodicals, software, etc.):	22. مصادر التعلم الأخرى (مثال: التعلم الإلكتروني، زيارات ميدانية، دوريات، برمجيات، إلخ....)	
UOB official platforms (Microsoft Teams & Blackboard)		
23. Course Description (as published in the College Catalogue):	23. توصيف المقرر (حسب ما ورد في دليل الكلية):	
Investigates the biochemical and physiological foundations of human dietary needs. Uses a comprehensive approach to nutritional digestion and metabolism of nutrients (carbohydrates, proteins, lipids, vitamins, and minerals). Throughout the semester, metabolic and chronic disorders associated with diet are reviewed.		
24. Course Intended Learning Outcomes (3 to 5 CILOs):	24. مخرجات التعلم للمقرر (CILOs) (3 إلى 5 مخرجات تعليمية):	
1. Explain the physiological processes of digestion and absorption, the metabolic pathways for the different macronutrients and their role in energy production, synthesis, and regulation of bodily functions.		
2. Identify the metabolism of micronutrients, their functions, deficiencies, toxicities, needs and significance for human health and disease.		
3. Apply metabolism principles on health promotion and disease prevention.		
4. Critically analyze contemporary research in human nutrition and metabolism.		
25. Course Assessment Percentages (as per Regulations of Study and Examination at the University of Bahrain):	25. أساليب التقييم ونسبها المنوية (بحسب نظام الدراسة والامتحانات في جامعة البحرين):	

Assessment التقييم	Type النوع	Percentage النسبة	Assessment Date تاريخ التقييم
Test 1	Individual فردي	15%	
Test 2	Individual فردي	15%	
Oral presentation	Pair ثنائي	10%	
Term paper	Pair ثنائي	10%	
Quiz 1	Individual فردي	5%	
Quiz 2	Individual فردي	5%	
Final Exam	Individual فردي	40	
Total	100%		
26. Description of Topics Covered		26. وصف الموضوعات التي ينبغي تناولها:	
Topic Title (e.g. chapter/experiment title) الموضوع		Description التفصيل	
Why Eat		The need for water, energy, metabolic fuels, hunger and appetite, and eating disorders.	
Enzymes and Metabolic Pathways		Chemical reactions, Enzymes, factor affecting enzyme activity, coenzymes and prosthetic groups, classification of enzyme and naming of enzymes, metabolic pathways, and enzyme in clinical chemistry and medicine.	
The Role of ATP in Metabolism		Adenine nucleotide, functions of ATP, Phosphorylation of ADP to ATP.	
Digestion and Absorption		The gastrointestinal tract, digestion and absorption of carbohydrates, fats, and proteins. Absorption of vitamins and minerals.	
The metabolism of Carbohydrate and Fats		Estimation of energy expenditure, energy balance and changes in body weight metabolic fuels in the fed and fasting states, energy- yielding metabolism, metabolism of fats, tissue reserves of metabolic fuels, and gluconeogenesis.	
Protein Nutrition and Metabolism		Nitrogen balance and protein requirements, essential amino acids, protein synthesis, metabolism of amino acids.	
The Integration and Control of Metabolism		Patterns of metabolic regulation, intercellular regulation of enzyme activity, response to fast-acting hormones by covalent modification of enzyme of proteins, response to slow-acting signals by changes in enzyme	

			synthesis, hormonal control in fed and fasting states, selection of fuels for muscle activity, a failure of regulation of blood glucose concentration in diabetes mellites.	
	Vitamins		Determination of requirements and reference intakes, metabolism, absorption, functions, deficiencies, and toxicities of vitamin A, D, E, K, Thiamine, Riboflavin, Niacin, vitamin B6, Vitamin B12, Folic Acid and Folate, Biotin, Pantothenic Acid, and Vitamin C.	
	Minerals		Calcium, Calcium homeostasis, osteoporosis, minerals that function as prosthetic groups in enzymes (Cobalt, Copper, Iron, Molybdenum, Selenium, and Zinc), minerals that have a regulatory role (in neurotransmission, as enzyme activators or in hormones) (calcium, chromium, iodine, magnesium, manganese, sodium and potassium), minerals known to be essential, but whose function is not known (silicon, vanadium, nickel and tin), minerals that have effects in the body, but whose essentiality is not established (fluoride and lithium), and nutritional anemias.	
	Nutrition and Chronic Noncommunicable Diseases		chronic noncommunicable diseases, types of evidence linking diet and chronic diseases, Guidelines of a prudent diet, nutritional genomics, free radicals, oxidative damage and antioxidant nutrients, homocysteine in cardiovascular diseases.	
	Overweight and Obesity		Desirable body weight, problems of overweight and obesity, obesity and metabolic syndrome, causes and treatment of obesity, energy expenditure, availability of foods, control of appetite, and obesity management.	
	Protein- Energy Malnutrition: Problems of Undernutrition		Problems of deficiency, protein- energy malnutrition, marasmus, cachexia, and kwashiorkor.	
27. Weekly Schedule (Theory)			27. الجدول الأسبوعي	
Week الأسبوع	Date التاريخ	Topics Covered الموضوعات المتناولة	CILOs مخرجات التعلم للمقرر (CILOs)	Teaching/Assessment Mode and Method منهجية ونمط التدريس/التقييم

1		Why Eat	1	Lectures Quiz 1 Test 1 Final Exam
2		Enzymes and Metabolic Pathways	1	Lectures Quiz 1 Test 1 Final Exam
3		The Role of ATP in Metabolism	1	Lectures Test 1 Final Exam
4		Digestion and Absorption	1 &2	Lectures Test 1 Final Exam
5		The metabolism of Carbohydrate and Fats	1	Lectures Quiz 2 Test 2 Final Exam
6		Protein Nutrition and Metabolism	1	Lectures Quiz 2 Test 2 Final Exam
7		The Integration and Control of Metabolism.	1 &2	Lectures Test 2 Final Exam
8		Vitamins	2	Lectures Test 2 Final Exam
9		Vitamins	2	Lectures Test 2 Final Exam
10		Minerals	2	Lectures Final Exam
11		Nutrition and Chronic Noncommunicable Diseases	1 &3	Lectures Final Exam
12		Nutrition and Chronic Noncommunicable Disease	1 &3	Lectures Final Exam
13		Overweight and Obesity	1&3	lectures Final Exam
14		Protein- Energy Malnutrition: Problems of Undernutrition	1&3	lectures Final Exam
15			4	Oral Presentation
16				

28. Academic Integrity Statement	28. بيان النزاهة الأكاديمية
Students are to observe the highest level of honesty and academic ethics in pursuit of their academic goals as per UOB Regulations of Student Conduct and Academic Integrity, Anti-plagiarism Policies, and Students' Rights and Responsibilities Handbook. The consequences for cheating, plagiarism, unauthorized collaboration, and other forms of academic dishonesty can be very serious and will be dealt with as per the aforementioned policies and regulations.	يتعين على الطلبة الالتزام بأعلى مستويات الصدق والأمانة والأخلاق الأكاديمية في سعيهم لتحقيق أهدافهم الأكاديمية وفقاً للوائح سلوك الطلاب والنزاهة الأكاديمية، سياسات مكافحة الانتحال، ودليل حقوق الطلبة وواجباتهم، المعمول بها في جامعة البحرين. يمكن لعواقب الغش والسرقة الأدبية والتعاون غير المصرح به وغيرها من أشكال عدم الأمانة الأكاديمية أن تكون خطيرة للغاية وسيتم التعامل معها وفقاً للسياسات واللوائح المذكورة آنفاً.
29. Attendance and Absence Regulations	29. نظام الحضور والغياب
Students are required to adhere to regular attendance for class lectures and practical sessions, as determined by the nature of the course, as per Article (33) of Regulations of Study and Examination at the University of Bahrain.	يجب على الطلبة الالتزام بالحضور المنتظم للمحاضرات الصفية والعملية، حسبما تحدده طبيعة المقرر الدراسي، ووفقاً للمادة (33) من نظام الدراسة والامتحانات في جامعة البحرين.