



Academic Course Specification Form

استمارة توصيف المقرر الأكاديمي

القسم الخاص بالطالب Section Concerning the Student

1. Course Code:	BIOLS 443	1. رمز المقرر:
2. Course Title	Ecotoxicology	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:	2-2-3	6. عدد الساعات المعتمدة:
7. Course NQF Level:	8	7. مستوى المقرر وفقاً للإطار الوطني للمؤهلات:
8. Notional Hours:	124	8. عدد الساعات الافتراضية:
9. NQF Credits:	12	9. عدد الساعات المعتمدة للمقرر وفقاً للإطار الوطني للمؤهلات:
10. European Credit Transfer System (ECTS) credits	6	10. عدد الساعات للمقرر بالنظام الأوروبي
11. Prerequisite:	BIOLS340	11. المتطلب السابق للمقرر:
12. Lectures Timing & Location:		12. وقت المحاضرة ومكانها:

13. General Mode of Teaching and Learning	Tranditional 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:	
1. "Fundamentals of Ecotoxicology: The Science of Pollution" (5th Edition) CRC Press. 2. Aquatic Ecotoxicology: Advancing Tools for Dealing with Emerging Risks" (2nd Edition) edited by Céline A. Guéguen and Vincent L. Saint-Louis (2023), Academic Press.		
21. References:	21. المراجع:	
1. (http://www.ac-knowledge.net/uobv3/): Biology books available in library		
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....)	
Nil		
23. Course Description (as published in the College Catalogue):	23. توصيف المقرر (حسب ما ورد في دليل الكلية):	
Fundamentals of toxicology, ecological interactions, including the sources, fate, and effects of pollutants in the environment, Bioaccumulation, Biomagnification, and ecotoxicological testing methods, Risk assessment, regulatory frameworks, and the impact of pollutants on various ecosystems.		
24. Course Intended Learning Outcomes (3 to 5 CILOs):	24. مخرجات التعلم للمقرر (CILOs) (3 إلى 5 مخرجات تعليمية):	
1. Discuss the fundamental principles of toxicology.		
2. Analyze the mechanisms by which pollutants are transported and transformed into the environment.		
3. Evaluate the ecological and health impacts of various pollutants on terrestrial, aquatic, and marine ecosystems.		

4. Apply standardized ecotoxicological testing methods to assess the effects of pollutants on different organisms and ecosystems.			
5. Develop comprehensive risk assessments that effectively regulate the remediation strategies for managing environmental pollutants.			
25. Course Assessment Percentages (as per Regulations of Study and Examination at the University of Bahrain):		25. أساليب التقييم ونسبها المئوية (بحسب نظام الدراسة والامتحانات في جامعة البحرين):	
Assessment التقييم	Type النوع	Percentage النسبة	Assessment Date تاريخ التقييم
Test 1	Individual فردي	20%	
Test 2	Individual فردي	20%	
Lab Assignments	Individual فردي	20%	
Final Exam	Individual فردي	40%	
Total	100%		
26. Description of Topics Covered		26. وصف الموضوعات التي ينبغي تناولها:	
<i>Topic Title</i> (e.g. chapter/experiment title) الموضوع		<i>Description</i> التفصيل	
Introduction to Toxicology		Overview of toxicology Definitions and basic concepts Historical perspective and significance in Biology	
Sources of Environmental Pollutants and Fate of Pollutants in the Environment		Natural vs. anthropogenic sources Types of pollutants (chemical, biological, physical) Major environmental pollutants and their sources Environmental transport processes Degradation and transformation of pollutants Persistence and bioavailability	
Effects of Pollutants on Organisms and Bioaccumulation and Biomagnification		Mechanisms of toxicity Acute vs. chronic effects Dose-response relationships, Concepts and definitions Factors influencing bioaccumulation Case studies of biomagnification in food web	
Ecotoxicology and Ecosystem Impact and pollutant testing		Impact on terrestrial, aquatic, and marine ecosystems Indicator species and biomonitoring Laboratory testing (in vitro and in vivo) Field testing methods	

Risk Assessment in Toxicology	Steps of risk assessment (hazard identification, dose-response assessment, exposure assessment, risk characterization) Uncertainty and variability in risk assessment Case studies
Emerging Pollutants and Global Challenges	New and emerging pollutants (pharmaceuticals, microplastics, etc.) Climate change and pollutant dynamics
Mitigation of pollutants	Pollution prevention and control measures Remediation technologies (bioremediation, phytoremediation, etc.)
Introduction to Toxicology	Overview of toxicology Definitions and basic concepts Historical perspective and significance in Biology
Sources of Environmental Pollutants and Fate of Pollutants in the Environment	Natural vs. anthropogenic sources Types of pollutants (chemical, biological, physical) Major environmental pollutants and their sources Environmental transport processes Degradation and transformation of pollutants Persistence and bioavailability
Effects of Pollutants on Organisms and Bioaccumulation and Biomagnification	Mechanisms of toxicity Acute vs. chronic effects Dose-response relationships, Concepts and definitions Factors influencing bioaccumulation Case studies of biomagnification in food web
Ecotoxicology and Ecosystem Impact and pollutant testing	Impact on terrestrial, aquatic, and marine ecosystems Indicator species and biomonitoring Laboratory testing (in vitro and in vivo) Field testing methods
Risk Assessment in Toxicology	Steps of risk assessment (hazard identification, dose-response assessment, exposure assessment, risk characterization) Uncertainty and variability in risk assessment

			Case studies	
27. Weekly Schedule			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		Introduction	1	Traditional تقليدي
2		Sources of Environmental Pollutants	1, 2	Traditional تقليدي
3		Fate of Pollutants in the Environment	1, 2	Traditional تقليدي
4		Effects of Pollutants on Organisms	1, 2, 3	Traditional تقليدي
5		Effects of Pollutants on Organisms	1, 2, 3	Traditional تقليدي
6		Bioaccumulation and Biomagnification	1, 2, 3	Traditional تقليدي
7		Bioaccumulation and Biomagnification	1, 2, 3	Traditional تقليدي
8		Ecotoxicology and Ecosystem Impact and pollutant testing	1, 2	Traditional تقليدي
9		Risk Assessment in Toxicology	1, 2	Traditional تقليدي
10		Emerging Pollutants and Global Challenges	1, 2, 3	Traditional تقليدي
11		Mitigation of pollutants	1, 2, 3	Traditional تقليدي
12		Ecotoxicology	1, 3, 4	Traditional تقليدي
13		Ecosystem Impact and pollutant testing	1, 4	Traditional تقليدي
14		Risk Assessment in Toxicology	1, 4	Traditional تقليدي
15		Revisions		
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 .
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