Kuwait University
Vice President for Academic Affairs

جامعة الكويت
نائب مدير الجامعة للشئون العلمية

نموذج توصيف مقرر
Course Description Form

Name of College\Faculty : College of Science — **اسم الكلية:**

Name of Department: Biological Sciences (Mcrobiology Program) — **اسم القسم العلمي:**

Course Name	**Air and Water Microbiology** **مكروبيولوجيا الهواء و الماء**	**اسم المقرر**
Course No.	**343-0495**	**رقم المقرر**
No. of Credits	**3**	**عدد الوحدات**
Theoretical Hours	**2**	**عدد الساعات النظرية**
Practical Hours	**3**	**عدد الساعات المحلية**

Course topics — **مواضيع المقرر**

1, Aeromicrobiology
2. Aquatic microbiology
3. Potable water microbiology
4. Wastewater microbiology

Text book: (Name, Author , Year , Publisher) — **عنوان الكتاب : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)**

1. **Pepper, I., Gerba, C.P., Gentry, T. and Maier, R.M. eds., 2011. *Environmental microbiology*. Academic press.**
2. **Munn, C.B., 2019. *Marine microbiology: ecology & applications*. CRC Press.**

References: (Name , Author , Year . Publisher) — **عنوان المرجع : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)**

Madigan, M.T., Bender, K.S., Buckley, D.H., Sattley, W.M. and Stahl, D.A., 2020. Brock Biology of Microorganisms. 16th ed. Harlow: Pearson

Prerequisites 0495-205, 0495-206 & 0495-207 — **متطلبات المقرر**

	Exams	**25**	**%**	**25**	**الاختبارات**	
	Quizzes		**%**		**امتحانات قصيرة**	
	H.W.	**5**	**%**	**5**	**واجبات**	
	Practical	**30**	**%**	**30**	**العملي**	

آلية رصد المقرر	الاختبار النهائي	40	%	40	Final	Grading
	% 100					

أهداف مخرجات المقرر :					
الرقم	أهداف مخرجات المقرر :	أمثله من المقرر لتحقيق هذه الأهداف	المستوى المطلوب من عضو هيئة التدريس لتحقيق الهدف :		
			عالي	متوسط	منخفض
1					
2					
3					
4					
5					
الحقول					
المهارات					
منسق المقرر (اسم عضو هيئة التدريس المشرف على توصيف المقرر ، توقيعه ، الختم و الرتبة الأكاديمية)					
تاريخ إعداد النموذج			/ /		

Course objectives					
No.	Course Objectives (Learning Outcomes)	Example(s) of relevant (Topics and activities)	Recommended Level to satisfy the objectives		
			High	Medium	Low
1	Understand the survival, transmission, and control of airborne microorganisms	Lectures on aeromicrobiology; lab sessions on air sampling; field trip to air quality monitoring stations	X		
2	Apply techniques for sampling, isolating, and identifying microorganisms in air and water	Practical sessions on air and water sampling; lab work on microbial enumeration and identification	X		
3	Analyze microbial communities in various aquatic environments and their ecological roles	Lectures on aquatic microbiology; study of microbial loops and	X		

		biogeochemical cycles; lab analysis of water samples			
4	Evaluate the microbiological quality of potable water and understand water purification methods	Lectures on coliform testing; lab work on presumptive, confirmed, and completed tests; visit to water quality labs	**X**		
5	Assess the role of microorganisms in wastewater treatment and their impact on public health	Lectures on sewage treatment processes; lab analysis of wastewater; field trip to sewage treatment facilities	**X**		
Fields	This course provides foundational and applied knowledge relevant to several interdisciplinary fields: • Environmental Microbiology • Public Health and Sanitation • Water and Wastewater Engineering • Ecology and Environmental Science • Biotechnology and Microbial Ecology				
Skills	• Technical Laboratory Skills: Mastery of microbial sampling, culturing, and identification techniques. • Analytical Thinking: Ability to interpret microbiological data from environmental samples. • Environmental Awareness: Understanding of microbial roles in air and water ecosystems and their implications for public health. • Field Competency: Experience with real-world applications through field trips and lab-based assessments. • Scientific Communication: Skills in writing lab reports, presenting findings, and engaging in scientific discussions.				
Coordinator (Name and Rank) :	**Professor Huda Mahmoud**				
Signature and stamp :					
Date:	**15\ 11/2025**				