

نموذج توصيف مقرر
Course Description Form

Name of College\Faculty :

Name of Department:

اسم الكلية: العلوم
اسم القسم العلمي: العلوم البيولوجية

Course Name	Industrial Microbiology	اسم المقرر
Course No.	0495-344	رقم المقرر
No. of Credits	3	عدد الوحدات
Theoretical Hours	2	عدد الساعات النظرية
Practical Hours	1	عدد الساعات المحلّية
Course topics		مواضيع المقرر
1. Microorganisms and the industry, history and scope of microbiology. 2. Techniques in industrial fermentations. 3. Fermentation and fermentation systems. 4. Industrial Fermentations 5. Chemical transformations/modifications: production of steroids/sterols 6. Microbiological mining 7. Strain Improvement		
Text book: (Name, Author , Year , Publisher)		عنوان الكتاب : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)
1. Industrial Microbiology : An Introduction. Waite <i>et al.</i> , 2001. Blackwell Scientific		
References: (Name , Author , Year . Publisher)		عنوان المرجع : (الاسم ، المؤلف ، سنة الطبع ، دار النشر)

Reference Book(s): Demain, A.L. and Solomon, N.A. 1986. Manual of Industrial Microbiology & Biotechnology. American Society for Microbiology, Washington, D.C.

Prerequisites				متطلبات المقرر		
Grading	Exams	20	%		الاختبارات	آلية رصد المقرر
	Quizzes	6	%		امتحانات قصيرة	
	H.W.	4	%		واجبات	
	Project (field study) Lab	30	%		مشاريع (دراسة ميدانية)	
	Final	40	%		الاختبار النهائي	
	%100					

أهداف مخرجات المقرر :					
الرقم	أهداف مخرجات المقرر :	أمثله من المقرر لتحقيق هذه الأهداف	المستوى المطلوب من عضو هيئة التدريس لتحقيق الهدف :		
			منخفض	متوسط	عالي
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	Critically evaluate the biological features that	Microorganisms and the industry.	X		

	are desired of organism for reliable industrial production processes, and the pivotal role of microorganisms in fermentation processes.				
2	Discriminate among the immediate and ultimate sources of microorganisms used in industrial processes.	Isolation of microorganisms, preservation of microorganisms and characteristics of culture collection centres	X		
3	Acquire the knowledge to preserve microorganisms for long-term storage of microorganisms. Therefore, by the end of this section student should be able to source for, maintain organisms for and organization that produces microbial-derived products.	Methods for long-term preservation of microorganisms	X		
4	Acquire understanding of the general techniques used in industrial fermentations.	Techniques in laboratory fermentations	X		
5	Gain the understanding of various types of	Types of fermentations, and field trips to	X		



	fermentation systems, and various examples of industrial production processes for a wide range of microbial products of commercial value.	microorganism-based industries in Kuwait.			
6	Exemplification of the biochemical characteristics of microorganisms as the basis versatility and uniqueness of some microbial processes. In this topic, the students will appreciate the principle that the basic physiology/biochemistry of microorganisms forms the basis for industrial processes---chemolithotrophic physiology of thiobacilli forms the basis for microbiological mining of copper, and steroids transformed into different isomeric forms.		X		
Fields	Microbiology, Biotechnology, Industry, Bioengineering				



Skills	
Coordinator (Name and Rank) :	Prof. Dina Al-Mailem
Signature and stamp :	د. هيا السمار قسم العلوم البيولوجية كلية العلوم - جامعة الكويت
Date:	2025\ 11 \30