

نموذج توصيف مقرر
Course Description Form

Name of College\Faculty :

Science

اسم الكلية:

Name of Department:

Chemistry

اسم القسم العلمي:

Course Name	CHEMICAL INDUSTRIES	اسم المقرر
Course No.	477	رقم المقرر
No. of Credits	3	عدد الوحدات
Theoretical Hours	3	عدد الساعات النظرية
Practical Hours	0	عدد الساعات المحلّية
Course topics		مواضيع المقرر
1. Definition of chemical processes. 2. Introduction to quality systems. 3. Safety and industrial waste treatment. 4. Desalination. 5. Wastewater treatment. 6. Petrochemicals. 7. Dyes. 8. Food and agrochemicals. 9. Sulfur and sulfuric oxide. 10. Gases productions. 11. Pharmaceuticals.		

12. Industrial catalysis.

13. Soap and detergents.

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

“The Chemical Industry” by Alan Heaton, Latest Edition, 1994.

Blackie Academic & Professional, London, N.Y.

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

- 1) "Shreve's Chemical Process Industries" by George T. Austin, McGraw-Hill, Latest edition, Singapore.
- 2) Fundamentals of industrial Chemistry, Pharmaceuticals Polymers and Business. By John A Tyrell. John Wily , 2014.
- 3) Industrial Inorganic Chemistry by Mark Anthony Benvenuto. De Gruyter; Illustrated edition, 2015

Prerequisites				متطلبات المقرر	
Grading	Exams		% 40	الاختبارات	آلية رصد المقرر
	Quizzes		% 5	امتحانات قصيرة	
	H.W.		% 5	واجبات	
	Project (field study)		% 10	مشاريع (دراسة ميدانية)	
	Final		% 40	الاختبار النهائي	
	%				

Chapters included:

Chapter	Title	Sections Included	
1	Introduction	1-6	inorganic
2	Quality and safety issues	1-4	inorganic
4	Polymers	1-10	physical
5	Dyestuffs	1-10	organic
6	The sulphur, phosphorus, nitrogen and chlor-alkali industries	1-7	inorganic
7	Agrochemicals	1-6	inorganic
8	The pharmaceutical industry	1-7	organic
9	Biological catalysis and biotechnology	1-6	physical

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 role of chemistry in chemical industries	Definition of chemical processes	✓		
2	Understand the historical development of chemical industries	Definition of chemical processes	✓		
3	Know what a chemical plant consists of	Introduction to quality systems	✓		



4	Realize how the chemistry of a reaction is used to make large production	Introduction to quality systems	✓		
5	Draw block diagrams from description	Introduction to quality systems	✓		
6	Understand the importance and differences of flow sheets	Introduction to quality systems	✓		
7	Know how to read a flow sheet	Introduction to quality systems	✓		
8	Realize why only fractions of all materials invented on the world are produced	Desalination.	✓		
9	Know how to do a quick estimation of the feasibility study of a chemical process	Desalination, Wastewater treatment	✓		
10	Understand the influences of chemical plants products, by products and waste on the environments	Desalination, Wastewater treatment	✓		
11	Acquire knowledge about the large-scale production of fresh water	Wastewater treatment	✓		
12	Recognize the actual cost of water production	Wastewater treatment	✓		
13	Realize the importance of bad water consumption practices	Wastewater treatment	✓		
14	Realize that wastewater is a valuable source of water	Wastewater treatment	✓		
15	Know the premises of wastewater	Wastewater treatment	✓		
16	Understand the units involved in handling large flow of wastewater	Wastewater treatment	✓		
17	Introduce petrochemical industries	Petrochemicals	✓		
18	Illustrate how dyes could be manufactured	Dyes	✓		
19	Discuss the manufacture of sulphuric acid	Suffer and sulfuric oxide	✓		

20	Illustrate the production of P-containing compounds	Food and agrochemicals	✓		
21	Explain the manufacture of N-containing compounds	Food and agrochemicals	✓		
22	Explain the general characteristics of agrochemicals industry	Food and agrochemicals	✓		
23	Illustrate the fundamentals of production of pesticides, fungicides, herbicides, and insecticides	Food and agrochemicals	✓		
24	Explain type of food processing	Food and agrochemicals	✓		
25	Discuss the manufacture of dry-ice, hydrogen, oxygen, and nitrogen	Gases productions	✓		
26	Discuss the preparation of common pharmaceutical products	Pharmaceuticals	✓		
27	Discuss the basis of automobile catalytic systems	Industrial catalysis	✓		
28	Explain the manufacture of liquid, powder and solid-bars detergents	Soap and detergents	✓		
Fields					
Skills					
Coordinator (Name and Rank) :					
Signature and stamp :					
Date:	9\ 11 \2025				