



برنامج الكيمياء التطبيقية الصناعية
Applied Industrial Chemistry



المقررات الدراسية للبرنامج
Curriculum of IAC Program





برنامج الكيمياء التطبيقية الصناعية
Applied Industrial Chemistry



مقررات المستوى الأول
Courses of First Level

الفصل الدراسي الأول First Semester

Level 1; Sem 1		Course Title	Credit Hours		
Code	Preq.	Obligatory Courses	Lec.	Prac.	Cred.
CHM101	-----	General chemistry	2	2	3
PHY101	-----	Properties of matter and heat	2	2	3
MAT101	-----	Calculus	2	2	3
BOT101	-----	General botany	1	2	2
COM101	-----	مبادئ الحاسب الالى	1	2	2
UNI101	-----	Scientific English language	2	-	2
UNI103	-----	حقوق الانسان ومكافحة الفساد	1	-	1
Elective: Select <u>two</u> credit hour from the following					
UNI105	-----	التعلم الذاتى	1	-	1
UNI107	-----	الثقافة البيئية	1	-	1
UNI109	-	الإبتكار وريادة الأعمال	1	-	1
			Total = 17 hours		

الفصل الدراسي الثانى Second Semester

Level 1; Sem 2		Course Title	Credit Hours		
Code	Preq.	Obligatory Courses	Lec.	Prac.	Cred.
CHM102	-	Introduction to Physical chemistry	2	2	3
PHY102	-	Electricity and basics of electronics	2	2	3
MAT102	-	Differential equations	2	2	3
ZOO102	-	General zoology	1	2	2
COM102	-	تطبيقات الحاسب الالى	1	2	2
UN102	-	مبادئ الادارة والقيادة	1	-	1
UN104	-	تاريخ وفلسفة العلوم	1	-	1
Elective: Select two credit hour from the following					
UNI106	-----	ثقافة الجودة	1	-	1
UNI108	-----	أخلاقيات مزاولة المهنة	1	-	1
UN110	-----	مهارات التواصل	1	-	1
			Total = 17 hours		

مقررات المستوى الثانى
Courses of Second Level

الفصل الدراسى الأول First Semester

Level 2; Sem 1		Course Title	Credit Hours		
Code	Preq.		Lec.	Prac.	Cred.
CHM201	CHM102	Chemical thermodynamics	2	-	2
CHM203	CHM101	Chemistry of main elements	2	2	3
CHM205	CHM101	Principles of organic chemistry (1) (Aliphatic)	2	2	3
CHM207	CHM101	Principles of organic chemistry (2) (Aromatic)	2	-	2
CHM209	CHM102	Principles of analytical chemistry	2	2	3
CHM211	CHM102	Electrochemistry (1)	2	-	2
CHM213	CHM102	Chemical kinetics	2	2	3
			Total = 18 hours		

الفصل الدراسى الثانى Second Semester

Level 2; Sem 2		Course Title	Credit Hours		
Code	Preq.		Lec.	Prac.	Cred.
CHM202	CHM203	Chemistry of transition elements	2	-	2
CHM204	CHM205	Organic chemistry (3) (Bifunction & Stereochemistry)	2	2	3
CHM206	CHM209	Instrumental analysis (1)	2	2	3
CHM208	CHM211	Electrochemistry (2)	1	2	2
MAT202	MAT101	Mathematical statistics	1	2	2
Elective: Select six credit hours from the following					
BOT202	BOT101	Introduction to microbiology	1	2	2
GEO202	-----	Crystallography and minerals	2	-	2
BOT204	BOT101	Introduction to biotechnology	1	2	2
ZOO202	ZOO102	Introduction to entomology	1	2	2
			Total = 18 hours		

مقررات المستوى الثالث

Courses of Third Level

الفصل الدراسي الأول First Semester

Level 3; Sem 1		Course Title	Credit Hours		
Code	Preq.	Obligatory Courses	Lec.	Prac.	Cred.
CHM301	CHM213	Surface chemistry and catalysis	2	2	3
CHM303	-----	Principles of industrial chemistry	2	-	2
CHM305	CHM205	Organic chemistry (4) (Reaction mechanism & heterocyclic)	2	2	3
CHM307	CHM206	Instrumental analysis (2)	2	2	3
Elective: Select <u>six credit hours</u> from the following					
CHM309	CHM102	Phase rule and photochemistry	2	-	2
CHM311	CHM209	Water analysis and treatment	1	2	2
CHM313	CHM101	Introduction to nanosciences	2	-	2
CHM315	CHM206	Analytical Biochemistry	1	2	2
CHM317	CHM202	Chemistry of materials science	2	-	2
			Total = 17 hours		

الفصل الدراسي الثاني Second Semester

Level 3; Sem 2		Course Title	Credit Hours		
Code	Preq.	Obligatory Courses	Lec.	Prac.	Cred.
CHM302	CHM208	Instrumental analysis (3)	2	2	3
CHM304	CHM204	Chemistry of natural products and raw materials	2	2	3
Elective: Select <u>Ten credit hours</u> from the following					
CHM306	CHM305	Chemistry and processing of fertilizers and pesticides	2	-	2
CHM308	CHM205	Chemistry and processing of oils and fats	1	2	2
CHM310	CHM313	Applications of nanomaterials	2	-	2
CHM312	CHM202	Coordination and organometallic chemistry	2	-	2
CHM314	CHM102	Solid state and applied radiochemistry	2	-	2
CHM316	CHM207	Organic spectroscopy	2	-	2
CHM318	----	Pharmaceuticals chemistry	1	2	2
			Field trips	-	-
			Total = 16 hours		

مقررات المستوى الرابع

Courses of Fourth Level

الفصل الدراسي الأول First Semester

Level 4; Sem 1		Course Title	Credit Hours		
Code	Preq.	Obligatory Courses	Lec.	Prac.	Cred.
CHM401	CHM207	Chemistry of polymers and synthetic fibers	2	-	2
CHM403	CHM205	Petroleum chemistry and petrochemicals	2	2	3
CHM405	CHM203	Cement and ceramics industry	1	2	2
CHM407	-	Field training	-	6	3
Elective: Select six credit hours from the following					
CHM409	CHM305	Chemistry and processing of textile and dyes	1	2	2
CHM411	CHM209	Applied molecular spectroscopy	1	2	2
CHM413	UN104	Small industries management	2	-	2
CHM415	CHM301	Corrosion and metal protection	1	2	2
CHM417	CHM208	Food chemistry and analysis	1	2	2
CHM419	CHM101	Applied theoretical chemistry	2	-	2
			Total = 17 hours		

الفصل الدراسي الثاني Second Semester

Level 4; Sem 2		Course Title	Credit Hours		
Code	Preq.	Obligatory Courses	Lec.	Prac.	Cred.
CHM402	-	Essay & Research	-	6	3
CHM404	CHM308	Detergents and paints	2	2	3
CHM406	-	Labs and quality management	2	-	2
CHM408	CHM201	Industrial applications of thermal analysis	1	2	2
Elective: Select six credit hours from the following					
CHM410	CHM201	Unit operations and control	2	-	2
CHM412	-	Forensic Chemistry	2	-	2
CHM414	-	Environmental chemistry	2	-	2
CHM416	CHM308	Paper industry and printing materials	2	2	3
CHM418	CHM401	Polymers technology	2	-	2
Field trips					
			Total = 16 hours		