

T6. Course Specification (CS) توصيف المقرر

Institution	Najran University	Date	22/8/1438
College/Department	الكلية/ القسم	Sciences and Arts/ Chemistry department	

A. Course Identification and General Information: التعريف بالمقرر الدراسي ومعلومات عامة عنه:

1. Course title and code : Environmental Chemistry 311CHEM-2	
2. Credit hours: 2 hours per week(2+0) (Theoretical + practical)	
3. Program(s) in which the course is offered. Chemistry Education program (If general elective available in many programs indicate this rather than list programs)	
4. Name of faculty member responsible for the course : Dr. Nabil Alhemiary	
5. Level/year at which this course is offered : Fifth level/ 3 year	
6. Pre-requisites for this course (if any) : 102 CHEM -4	
7. Co-requisites for this course (if any): No	
8. Location if not on main campus : College of Sciences and Art for Girls	
9. Mode of Instruction (mark all that apply) (نمط التدريس (ضع علامة على كل ما ينطبق)	
a. Traditional classroom الفصل الدراسي التقليدي	<input type="checkbox"/> What percentage النسبة المئوية ؟ <input type="checkbox"/>
b. Blended (traditional and online) التعليم المدمج (التقليدي + عبر الانترنت)	<input checked="" type="checkbox"/> What percentage النسبة المئوية ؟ <input type="text" value="100"/>
c. e-learning التعليم الالكتروني	<input type="checkbox"/> What percentage النسبة المئوية ؟ <input type="checkbox"/>
d. Correspondence التعليم بالمراسلة (عن بعد)	<input type="checkbox"/> What percentage النسبة المئوية ؟ <input type="checkbox"/>
f. Other طرق أخرى	<input type="checkbox"/> What percentage النسبة المئوية ؟ <input type="checkbox"/>
Comments : Non	

B. Objectives الأهداف

1. What is the main purpose for this course

- The student learns the environmental chemistry.
- The student discusses atmosphere chemistry and realizes air pollution sources with primary and secondary pollutants. The student learns methods used to analyze air and methods to reduce air pollution impact.
- The student apprehends natural composition of soil, soils pollutants such as fertilizers,
- pesticides and herbicides and pesticides innovative alternatives.
- The student realizes water composition and types, water pollutants, treatment and quality (acidity, hardness, COD, BOD...).
- The student familiarizes with steps of physical, chemical and biological treatment, seawater desalination and waste water treatment methods.
- The student knows methods of collection, storage and analysis of air, soil and water samples.

2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)

- Use the Internet to view information on the topics of study.
- Update the content of the course is a league based on recent developments in the field and on the learning outcomes in the labor market.
- Compare the course contents with other regional or global universities.
- The use of different methods to assess the student and to the development of various skills and give them a chance to prove their ability in development.

C. Course Description (Note: General description in the form used in the Bulletin or handbook should be attached.

Course Description :

1. Topics to be Covered : الموضوعات التي ينبغي تغطيتها		
List of Topics قائمة الموضوعات	No. of Weeks عدد الأسابيع	Contact Hours الساعات الفعلية للتدريس
Definition of environmental chemistry. The environments of the earth (atmosphere, hydrosphere, lithosphere and biosphere).	1	2
Importance of atmosphere Principal atmosphere layers (troposphere, stratosphere, mesosphere and thermosphere). Natural Composition of atmosphere	1	2
Air Pollution (Sox, NOx, Cox) Ozone layer - Building and destruction of ozone gas - Ozone hole - CFCs	3	6
Soil analysis and soil pollution control. Radiation pollution	1	2
Water distribution in earth planet and water cycle Chemical natural composition of water (rain waters, sea waters, ground waters).	2	4
Water pollution (pollution sources, types of pollutants, organic pollutants, inorganic pollutants, biological pollutants, impact of pollutants, acidity and alkalinity, hardness).	3	6
Purification of water (physical treatment, storage, physical coagulation, filtration, chemical treatment, chemical coagulation, water softening, ion-exchange, biological treatment, thermal sterilization, UV radiation sterilization, ozone sterilization, chlorination sterilization). Seawater desalination (reverse osmosis, electrodialysis, distillation). Waste water treatment (primary treatment, secondary treatment, tertiary treatment).	2	4
Green Chemistry: Principles and Concepts	2	4
	15	30

1.Course components (total contact hours and credits per semester): مكونات المقرر (اجمالي عدد الساعات الفعلية والوحدات المعتمدة لكل فصل دراسي):						
	Lecture المحاضرة	Tutorial مجموعات صغيرة	Laboratory or studio المعمل أو الاستديو	Practical التطبيقي	Other: أخرى	Total الاجمالي
Contact Hours الساعات الفعلية	30	-	-	-	-	30
Credit الوحدات المعتمدة	2	-	-	-	-	2

3-Additional private study/learning hours expected for students per week: 6 hours Office and 4 hours of academic guidance per week .
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy.

On the table below are the five NQF Learning Domains, numbered in the left column.

First, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table)

Second, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes.

Third, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain).

Code # مسلسل	NQF Learning Domains And Course Learning Outcomes مجالات التعلم وفق الإطار الوطني للمؤهلات ومخرجات تعلم المقرر	Course Teaching Strategies استراتيجيات التدريس	Course Assessment Methods أساليب التقييم
1.0	Knowledge At the end of the course the student be able to:		
1.1	Know environment and atmosphere composition , types of chemical pollutants in the atmosphere, water and soil.	Lectures Discussion. -Brainstorming. Cooperative learning	Homework, exams and quiz
1.2	Describe treatment for air, water and soil pollution	Lectures Discussion.	Homework, exams and quiz

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		-Brainstorming. Cooperative learning	
1.3	Remember water composition and types, water pollutants and to conduct some basic analysis of water quality.	Lectures Discussion. -Brainstorming. Cooperative learning	Homework, exams and Quiz
1.4	Recognize the basic information to understand the environmental studies for the future and Green Chemistry	Lectures Discussion. -Brainstorming. Cooperative learning	Homework, exams , Quiz and Research papers
2.0	Cognitive Skills At the end of the course the student be able to:		
2.1	Differentiate between the different sources of water and the importance of maintaining pure.	Lectures Discussion. -Brainstorming. Cooperative learning	Homework, exams and Quiz
2.2			
3.0	Interpersonal Skills & Responsibility At the end of the course the student be able to :		
3.1	Participate in the collective work to accomplish the tasks of teaching or research	Lectures Discussion. -Cooperative learning	Participation in the discussions Scientific research
3.2			
4.0	Communication, Information Technology, Numerical At the end of the course the student be able to:		
4.1	Use computer, software and Internet in chemistry	Lecture Self-education	Participation in the discussions Scientific research
4.2			
5.0	Psychomotor المهارات النفس حركية		
5.1	Not applicable		

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5.2			

5. Schedule of Assessment Tasks for Students During the Semester

الجدول الزمني للمهام التي يقيم من خلالها الطلبة أثناء الفصل الدراسي

	Assessment task (e.g. essay, test, Quizzes, group project, examination, speech, oral presentation, etc.) مهام التقييم (مثل: كتابة مقال – اختبار – اختبارات قصيرة- مشروع جماعي – اختبار نهائي – خطبة, عرض تقديمي شفوي.....الخ)	Week Due أسبوع استحقاق التقييم	Proportion of Total Assessment النسبة من التقييم الكلي
1	Writing Exam	7	20%
2	Final Exam	16	50%
3	Research paper	10	10%
4	The quiz	5	10%
	Homework		10%

D. Student Academic Counseling and Support الإرشاد الأكاديمي والدعم الطلابي

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)
6 hours Office and 4 hours of academic guidance per week .

E. Learning Resources مصادر التعلم

1. List Required Textbooks قائمة الكتب المقررة المطلوبة :
Environmental Chemistry Overview, Gary W. Van Loon and Steve G. King Abdulaziz City for Science and Technology, Arab Organization for Translation. (An electronic book) 2014
2. List Essential References Materials (Journals, Reports, etc.)
قائمة المراجع الأساسية (الدوريات العلمية- والتقارير – وغيرها)
http://www.science.gov/browse/w_123.htm
<http://www.journals.elsevier.com/science-of-the-total-environment/>
3. List Electronic Materials Web Sites, Facebook, Twitter, etc.
قائمة المصادر الإلكترونية، مواقع الإنترنت، فيس بوك، تويتر، ... الخ
None
4. Other learning material such as computer-based programs/CD, professional standards or regulations and software.
مواد تعليمية أخرى مثل البرامج المعتمدة على الحاسب الآلي/الأسطوانات المدمجة، والمعايير المهنية أو اللوائح التنظيمية والبرمجيات.
None

F. Facilities Required المرافق اللازمة

- Indicate requirements for the course including size of classrooms and laboratories (i.e. number of seats in classrooms and laboratories, extent of computer access etc.)
حدد متطلبات المقرر الدراسي بما في ذلك حجم فصول الدراسة والمختبرات (أي: عدد المقاعد داخل الفصول الدراسية والمختبرات، وعدد أجهزة الحاسب الآلي المطلوب توفيرها... إلخ).
1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)
المرافق التعليمية (قاعات المحاضرات، المختبرات، حجرات / معامل العروض... إلخ):
Classrooms are equipped with different display and computer and internet connection.
 2. Computing resources (AV, data show, Smart Board, software, etc.)
التجهيزات الحاسوبية (أجهزة الصوت والصورة- الداتا شو – السبورة الذكية- السوفت وير(البرمجيات)).
Computers
.Data Show -
 3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)
مصادر أخرى (حددها... مثل: الحاجة إلى تجهيزات مختبر معينة، اذكرها، أو أرفق قائمة بها)

G. Course Evaluation and Improvement Processes **تقييم المقرر الدراسي وعمليات تحسينه**

<p>1. Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <ul style="list-style-type: none"> • Make calendar scheduled through the website of the University at the end of each semester • Discussion with students on a regular basis to take the feedback on the performance of faculty members and about the scheduled. • Make questionnaire to determine how satisfied students for tests scheduled • Evaluate the exam paper
<p>2. Other Strategies for Evaluation of Teaching by the Instructor or by the department.</p> <ul style="list-style-type: none"> • Evaluate the exam paper • Section Council discussions • Make achievement file for members • formative evaluation of students at the beginning of the semester
<p>3. Processes for Improvement of Teaching:</p> <ul style="list-style-type: none"> • Review Instructional Strategies recommended • Reviewing developments in the Course
<p>4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)</p> <ul style="list-style-type: none"> • Continuous monitoring of the level of the students in the tests
<p>5. Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement : صف ترتيبات التخطيط للمراجعة الدورية لمدى فعالية المقرر الدراسي والتخطيط للتحسين</p> <p>Review of course content according to the results of the scheduled evaluation and feedback from students. Develop the improvement and development plan to be based on the feedback from the periodic calendars. As implementation of the development plan and follow-up success in achieving its objectives, and amendment in the development plan and in accordance with the developments and progress in the implementation of the goals, according to the results of the quarterly calendar with the decision and the performance of a faculty member.</p>

Name of instructor :اسم استاذ المقرر Dr. Nabil Alhemiary

Signature :التوقيع: _____ Date Report Completed :تاريخ إكمال التقرير 20/8/1438H

Name of field experience teaching staff :اسم أعضاء هيئة تدريس الخبرة الميدانية

Program coordinator :منسق البرنامج _____

Signature :التوقيع: _____ Date received :تاريخ الاستلام
