Kingdom of Saudi Arabia
Ministry of education
Jouf University
Faculty of Science
Chemistry Department

Alignment between graduate attributes and PLOs.

Program graduate attributes:

The graduates of B. Chemistry Program should:

- Knowledge and Understanding: The graduate is familiar with theories, basic principles and practical skills in the basic branches of chemistry (organic _ inorganic analytical _ physical). (Attribute#1).
- Preparing qualified graduates to meet the needs of the Kingdom of the human cadres in various fields of chemistry(Attribute#9)
- Skills: The graduate has the skills of evaluation, explanation and accuracy in analyzing practical results in various fields of chemistry (Attribute#2).
- Skills: The graduate acquires laboratory skills in how to prepare and conduct qualitative analyzes and the use of different quantitative analysis devices and collecting these results, verifying them and linking them together (Attribute#3).
- Skills: The graduate can use research programs that help him to know the latest information and data that are needed in his field of work and research (Attribute#4).
- Skills: The graduate acquires clarification and demonstration skills when doing an explanation of a specific topic in chemistry in an easy and simple manner (Attribute#5).
- Skills: The graduate possesses changing ideas and methods in how to detect different chemicals (Attribute#6).
- Values: The graduate possesses knowledge of chemical effects on the environment and the outside society (Attribute#7).
- Values: The graduate possesses communication skills and cooperation with colleagues in the laboratory or classroom with mutual respect (Attribute#8)

Program intended learning outcomes:

Graduates of the B. Chemistry program will be able to:

Knowledge and Understanding	
K1	Demonstrate the main concepts and chemical laws in all studied chemistry branches

K2	Outline the scientific principles in the subfields of chemistry (analytical, inorganic, organic and physical), and apply these principles to interact with industrial fields
K3	Discuss the major types of chemical reactions, their characteristics, and mechanisms as well as their kinetics

K4	Explain, integrate and apply the relevant knowledge and theories in basic sciences and other disciplines and professional fields
Skills	
S1	Classify the chemical compounds and identify their properties
S2	Compare the results to predict and rationalize properties, mechanisms and patterns of reactivity
S3	Formulate processes, relationships and techniques related to different chemistry branches
S4	Obtain information from library, online and literature resources that will support the solving of chemical and research problems
S5	Evaluate, develop and conduct Chemistry experiments or test hypotheses, analyze and Interpret data and use scientific judgment to address conclusions and make a criticism.
Values	
V1	Conduct laboratory experiments safely, evaluate the potential impact of chemistry that may have on society, health and the environment
V2	Enhance students self and long life-learning using information technology, risk management, organization of time, and reviewing of a quality control processes.
V3	Collaborate effectively as part of a team, recognizing and respecting the viewpoints of others and developing understanding and awareness of leadership styles and their impacts upon projects.

Alignment between graduate attributes and PLOs:

NQF-KSA Learning Domains	Program Learning Outcomes (PLOs)	Graduate Attributes
Knowledge and Understanding	Demonstrate the main concepts and chemical laws in all studied chemistry branches(K1)	The graduate is familiar with theories, basic principles and practical skills in the basic branches of chemistry (organic _ inorganic analytical _ physical) (Attribute#1).
	Outline the scientific principles in the subfields of chemistry (analytical, inorganic, organic and physical), and apply these principles to interact with industrial fields(K2)	
	Discuss the major types of chemical reactions, their characteristics, and mechanisms as well as their kinetics(K3)	5- The graduate acquires clarification and demonstration skills when doing an explanation of a specific topic in chemistry in an easy and simple manner. (Attribute#5).
	Explain, integrate and apply the relevant knowledge and theories in basic sciences and other disciplines and professional fields(K4)	Preparing qualified graduates to meet the needs of the Kingdom of the human cadres in various fields of chemistry. (Attribute#9).
Skils	Classify the chemical compounds and identify their properties.(S1)	The graduate has the skills of evaluation, explanation and accuracy in analyzing practical results in various fields of chemistry (Attribute#2).
	Compare the results to predict and rationalize properties, mechanisms and patterns of reactivity.(S2)	The graduate can use research programs that help him to know the latest information and data that are needed in his field of work and research (Attribute#4).
	Formulate processes, relationships and techniques related to different chemistry branches.(S3)	The graduate possesses changing ideas and methods in how to detect different chemicals.(Attribute#6)
	Obtain information from library, online and literature resources that will support the solving of chemical and research problems.(S4)	The graduate can use research programs that help him to know the latest information and data that are needed in his field of work and research. .(Attribute#3)
	Evaluate, develop and conduct	The graduate acquires laboratory

	Chemistry experiments or test hypotheses, analyze and interpret data and use scientific judgment to address conclusions and make a criticism.(S5)	skills in how to prepare and conduct qualitative analyzes and the use of different quantitative analysis devices and collecting these results, verifying them and linking them together.(Attribute#3)
Values	Conduct laboratory experiments safely, evaluate the potential impact of chemistry that may have on society, health and the environment.(V1)	The graduate possesses communication skills and cooperation with colleagues in the laboratory or classroom with mutual respect (Attribute#8).
	Enhance students self and long life-learning using information technology, risk management, organization of time, and reviewing of a quality control processes.(V2)	The graduate possesses knowledge of chemical effects on the environment and the outside society. (Attribute#7).
	Collaborate effectively as part of a team, recognizing and respecting the viewpoints of others and developing understanding and awareness of leadership styles and their impacts upon projects.(V3)	The graduate possesses knowledge of chemical effects on the environment and the outside society (Attribute#7).

Alignment between graduate attributes and PLOs

Program Learning Outcomes		Program graduate attributes								
		Attribute#1	Attribute#2	Attribute#3	Attribute#4	Attribute#5	Attribute#6	Attribute#7	Attribute#8	Attribute# 9
Knowledge and Understanding	K1	√								
	K2	√								
	K3					√				
	K4									√
Skills	S1		√							
	S2				√					
	S3						√			
	S4			√						
	S5			√						
Values	V1								√	
	V2							√		
	V3							√		

Program Coordinator

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