1. General Attributes of the Graduates of Biochemistry -Chemistry Program

The graduates of the Biochemistry -Chemistry program must be able to:

Attributes of the Graduates of Basic Sciences	1.Recognize the role of Basic Sciences in the development of society. 2.Develop scientific approaches that meet community needs considering economic, environmental, social, ethical, and safety requirements. 3. Utilize scientific facts and theories to analyze and interpret practical data. 4. Collect, analyze, and present data using appropriate formats and techniques. 5. Postulate concepts and choose appropriate solutions to solve problems on scientific basis. 6. Apply effectively information technology relevant to the field. 7. Participate effectively in a multidisciplinary teamwork and be flexible for adaptation, decision making and working under contradictory conditions as well as exhibiting the sense of beauty and neatness. 8. Adopt self and long life-learning and participate effectively in research activities. 9. Deal with scientific data in Arabic, English or other languages.

Attributes of the graduate of Biochemistry -Chemistry Program	1- Apply safety standards and possess the basic competencies required for practical biochemical techniques. 2- Apply statistical rules in displaying biochemical data and evaluating activities of biochemical processes. 3- Recognize the basic skills for the practical application of chemical analyses and the ability to deal with perfection and responsibility with laboratory tools. 4- Acquire the skills of chemical analysis (methods of collection, handling and preservation of samples; Types and quality of laboratory chemicals and chemical reagents). 5- Communicate with others effectively and be able to participate in multiple university work specialties, taking into account social responsibility. 6- Make effective use of relevant information technology that enables him to search for information and the adoption of self-learning, taking into account the legal, ethical and professional rules. **7-** Contribute ideas and choose appropriate solutions to solve societal problems (water desalination, Energy, endemic diseases, pharmaceutical and medical preparations industry, pollution and environmental protection, Cement industry, petrochemical industry, forensic medicine, clinical medical analyses, and scientific research).

2. Knowledge and Understanding

The graduates of the Biochemistry -Chemistry program must be able to demonstrate the knowledge and understanding of:

NARS for Basic Sciences	2.1. The related basic scientific facts, concepts, principles and techniques. 2.2. The relevant theories and their applications. 2.3. The processes and mechanisms supporting the structure and function of the specific topics. 2.4. The related terminology, nomenclature and classification systems. 2.5. The theories and methods applied for interpreting and analyzing data related to discipline. 2.6. The developmental progress of the program-related knowledge. 2.7. The relation between the studied topics and the environment.
ARS for Biochemistry-Chemistry program Graduates	2.1. Demonstrate knowledge and comprehension of the theories, facts, concepts, fundamentals and techniques related to the fields of biochemistry and chemistry. 2.2. Acquire the essential knowledge in mathematics, physics, biology, statistics and other collateral subjects in order to understand the advanced and contemporary topics of biochemistry and chemistry. 2.3. Exhibit familiarity with the principles and procedures used in chemical analyses as well as in characterization and structural investigation of compounds. 2.4. Characterize the chemical nature and behavior of the functional groups in different types of molecules and macromolecules for interpreting data. 2.5. Appreciate the concepts of bio-diversity and maintaining of natural resources.

3. Intellectual Skills

The graduates of Biochemistry-Chemistry program must be able to:

NARS for Basic Sciences	3.1. Differentiate between subject-related theories and assess their concepts and principles. 3.2. Analyze, synthesize, assess and interpret qualitatively and quantitatively science relevant data. 3.3. Develop lines of argument and appropriate judgments in accordance with scientific theories and concepts. 3.4. Postulate and deduce mechanisms and procedures to handle scientific problems. 3.5. Construct several related and integrated information to confirm, make evidence and test hypotheses.
ARS for Biochemistry-Chemistry program Graduates	3.1. Discuss subject- related theories and assess their concepts and principles. 3.2. Analyze, evaluate and interpret qualitative and quantitative scientific data relevant to the various subjects of biochemistry and chemistry. 3.3. Develop lines of argument and appropriate judgment in accordance with scientific theories and concepts in the area of study. 3.4. Postulate and deduce mechanisms and procedures to handle scientific problems and choose optimum solutions for biochemical and chemical problems based on critical thinking. 3.5. Construct several related and integrated information to confirm, and make evidence in biochemical and chemical fields. 3.6. Analyze and interpret quantitative data relevant to the fields of biochemistry and chemistry in graphs, figures, tables, equations, and other sources of information

4. Practical and Professional Skills

The graduates of Biochemistry-Chemistry program must be able to:

NARS for Basic Sciences	4.1. Plan, design, process and report on the investigated data, using appropriate techniques and considering scientific guidance. 4.2. Apply techniques and tools considering scientific ethics. 4.3. Solve problems using a range of formats and approaches. 4.4. Identify and criticize the different methods used in addressing subject related issues.
ARS for Biochemistry-Chemistry program Graduates	4.1. Plan and conduct investigations using appropriate techniques relevant to the fields of biochemistry and chemistry and write structural reports on the data in accordance with the standard scientific guide lines. 4.2. Solve problems related to the fields of biochemistry and chemistry using a range of formats and approaches and employ appropriate techniques and tools in accordance with scientific ethics. 4.3. Handle chemical materials safely and conduct risk assessments taking into account their physical and chemical properties to avoid hazards associated with their use. 4.4. Employ standard laboratory instruments, procedures, and techniques used in the biochemical and chemical investigations. 4.5. Apply mathematical and computational tools to analyze and interpret experimental data in terms of theories relevant to biochemistry and chemistry 4.6. Read, scrutinize, and evaluate the validity and relevance of literature in a critical thinking approach. 4.7. Consider variations inherent in dealing with biological materials such as sample size, accuracy, precision and calibration.

5. General and Transferable Skills

The graduates of Biochemistry-Chemistry program must be able to:

NARS for Basic Sciences Graduate	5.1. Use information and communication technology effectively. 5.2. Identify roles and responsibilities, and their performing manner. 5.3. Think independently, set tasks and solve problems on scientific basis. 5.4. Work in groups effectively; manage time, collaborate and communicate with others positively. 5.5. Consider community linked problems, ethics and traditions. 5.6. Acquire self- and long life–learning. 5.7. Apply scientific models, systems, and tools effectively. 5.8. Deal with scientific patents considering property right. 5.9. Exhibit the sense of beauty and neatness
ARS for Biochemistry-Chemistry Graduates	5.1. Use information and communication technology effectively. 5.2. Identify roles and responsibilities, and set clear guidelines and performance indicators. 5.3. Think independently and solve problems on scientific basis. 5.4. Work in a team effectively, manage time, collaborate and communicate with others positively. 5.5. Address the community linked problems with considerable attention to the community ethics and traditions. 5.6. Acquire self - and lifelong learning. 5.7. Deal with property rights legally and ethically. 5.8. Exhibit the sense of beauty and neatness

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