



# Program Mission, Goals and Learning outcomes

## BACHELOR OF SCIENCE (B.Sc.) IN Chemistry

*Department of Chemistry*

**College of Science**



1. *Program Mission Statement (insert).*

The department is committed to preparing distinguished graduates in chemistry who can join the labor market by providing them with the basic and applied chemistry sciences, refining their scientific and intellectual skills, and preparing highly qualified researchers who can innovate to achieve the mission of the college and the University.

2. *List Program Goals (eg. long term, broad based initiatives for the program, if any).*

The program goals (PG) set by the department, in support of the mission, require that the graduate of the chemistry program should:

- PG1. Provide universities, higher institutes and military academies with scientific excellence for continuing postgraduate studies.
  - PG2. Provide human cadres of specialists and researchers in chemistry
  - PG3. Provide scientific and technical aids to develop the faculty member conveying to the achievement of international quality standards.
  - PG4. Prepare national competencies to meet the needs of the labour market in the industry and teaching
  - PG5. Find the right environment to instil creative and innovative competition among students.
  - PG6. Prepare highly graduates qualified scientifically able to deal with the tools of modern technology with high efficiency in different areas of chemistry.
- Obviously, a pre-requisite for achieving these outcomes is that, along with the department and faculty, the students should do the necessary hard work to follow the set procedures seriously and honestly.

3. *Program learning outcomes (Program LOs)*

In the following, we list the Program Learning Outcomes (PLO) of the Program 4 prepared in the framework the National Qualification Framework prepared by the NCAAA (reference):

1. **Knowledge**

- 1.1. Recall the fundamentals and application of chemical and scientific theories in all of the sub-disciplines of chemistry.
- 1.2. Identify organic compounds, their functional groups, structures and reactivity with application in life and industry.
- 1.3. Name the elements of the periodic table, their periodicity, reactivity of elements and the compounds formed as metallic or organometallic.
- 1.4. Describe principals of different analytical instruments and their functionality.

2. **Cognitive Skills**

- 2.1. Develop skills in problem solving, critical thinking and analytical reasoning.
- 2.2. Appraise fundamental theory in chemistry to laboratory practice and life habits.



- 2.3. Evaluate scientific information and interpret observations.
  - 2.4. Create awareness about the impact of chemistry on the society and environment.  
Develop research skills.
3. **Interpersonal Skills & Responsibility**
  - 3.1. To demonstrate skills to participate in class by asking questions and giving answers.
  - 3.2. To show ability to solve problems in groups and individually.
  - 3.3. To appraise team work and management of resources and time.
  - 3.4. To illustrate ability to do oral presentation.
4. **Communication, Information, Technology, Numerical**
  - 4.1. To demonstrate effective written and oral communication skills.
  - 4.2. To illustrate the ability to present data in graphs and obtain experimental variables.
  - 4.3. To operate electronic mail and Network in communicating with others.
5. **Psychomotor**
  - 5.1. To operate laboratory instruments.
  - 5.2. To perform chemical experiments and handle chemicals during laboratory classes