Program Learning Outcomes (PLOs)
B.Sc. in Plant Production Technology (Bologna Process)

In accordance with institutional quality assurance criteria and academic accreditation benchmarks established by the Department of Quality Assurance and University Performance, and based on the official four-year curriculum framework under the Bologna Process approved by the Curriculum Development Committee in the Department of Plant Production Technology, the targeted Program Learning Outcomes (PLOs) for the Bachelor of Science (B.Sc.) degree are formulated as follows:

1. Knowledge and Understanding (KU)

Upon successful completion of the B.Sc. program, graduates will be able to:

- **KU1 - Core Applied Sciences:** Comprehend fundamental theoretical and practical principles in plant physiology, plant anatomy, general botany, genetics, biochemistry, soil sciences, and plant nutrition.
- **KU2 - Modern Biotechnology Concepts:** Demonstrate basic understanding of genetic engineering principles, plant tissue culture protocols, and biotechnological tools used for crop improvement and plant propagation.
- **KU3 - Comprehensive Agricultural Domains:** Identify core principles and cultural practices for field crops, industrial crops, olericulture, evergreen pomology, forestry, protected agriculture, and floriculture & landscape design.

2. Intellectual and Analytical Skills (IA)

Upon successful completion of the B.Sc. program, graduates will be able to:

- **IA1 - Experimental & Statistical Analysis:** Apply basic statistical methods and agricultural experimental designs (such as CRD and RCBD) to analyze field data and interpret agricultural results.
- **IA2 - Diagnostic & Phytosanitary Problem-Solving:** Diagnose common plant diseases, insect pests, weed infestations, and nutrient deficiencies, proposing practical biological, chemical, and agronomic management strategies.

- **IA3 - Agronomic Planning & Economics:** Evaluate crop rotations, water management policies, natural resource economics, and conduct feasibility studies for agricultural projects.

3. Practical and Professional Skills (PP)

Upon successful completion of the B.Sc. program, graduates will be able to:

- **PP1 - Technical Facility & Nursery Operation:** Operate plastic tunnels, greenhouses, and nurseries; execute sexual and asexual propagation techniques, grafting, and micropropagation protocols.
- **PP2 - Seed Testing & Post-Harvest Handling:** Conduct seed purity, germination, and viability tests according to seed certification standards, and execute post-harvest handling, quality evaluation, and crop storage practices.
- **PP3 - Agricultural Machinery & Equipment Operation:** Calibrate, operate, and maintain agricultural tractors, tillage implements, precision sprayers, and harvesting machinery safely and efficiently.

4. General and Transferable Skills (GT)

Upon successful completion of the B.Sc. program, graduates will be able to:

- **GT1 - Academic & Technical Communication:** Conduct an undergraduate graduation research project, compile technical reports, and deliver scientific presentations effectively in Arabic and English.
- **GT2 - Farm Management & Team Collaboration:** Manage agricultural fields, grain grading laboratories, and apiaries collaboratively while adhering to professional ethics, workplace safety, and environmental sustainability.
- **GT3 - Digital Competency & Spatial Tools:** Utilize computer applications, digital tools, surveying instruments, and engineering drawing fundamentals for agricultural data processing and field mapping.