



Sanaa University

Faculty of Agriculture, Foods, and Environment

Department of Crop Science and Genetic Improvement



Department Mission:

Qualifying highly qualified and competent professionals in crop science and genetic improvement, utilizing the department's exceptional educational programs, and disseminating applied research studies that meet the needs of the community, leading to sustainable agricultural development.

Community Services

Department Services Provided to the Community:

Consultancy services in crop production
Consultancy services in crop breeding
Consultancy services in pastures and vegetation cover
Consultancy services in feeds and feedstuffs
Consultancy services in seed multiplication and testing
Consultancy services in environmental and sustainable agricultural development

Future Services (Upon Availability):

Seed testing and examination
Genetic analysis (DNA testing)
Analysis and evaluation of feedstuffs
Consultancy services in the preservation and maintenance of genetic resources

Department Aims:

The department aims to achieve the aims of the faculty and the university through the following:

- 1- Meeting the demand of high school graduates to enroll in the crop science and genetic improvement specialization, thereby increasing the faculty and university's capacity and reducing dropout rates from higher education.
- 2- Enhancing scientific research in crop science and genetic improvement and effectively contributing to solving societal and contemporary problems.
- 3- Contributing to the graduation of qualified scientific professionals with bachelor's degrees to support the agricultural and environmental sectors and meet their need for this specialization.
- 4- Establishing and fostering collaborative research and reciprocal scientific visits with local, regional, and international universities and research centers in the field of crop science and genetic improvement.
- 5- Creating and developing a stimulating learning environment that empowers students to be creative and achieve excellence, fostering their desire to pursue higher education in master's and doctoral programs.
- 6- Advancing and developing the field of crop science and genetic improvement, ensuring a promising professional future for graduates of this specialization.

Department Vision:

Attaining excellence and leadership in the field of crop science and genetic improvement and establishing effective community partnerships to achieve food security and a high degree of self-sufficiency in major food crops.

About the Department:

The Department of Crop Science and Genetic Improvement was initially established in 1989 as a branch of the Plant Production Department within the faculty. However, in 1996, it underwent a significant transformation and became an independent department known as the Department of Crops and Pastures. More recently, in 2020, the department underwent further academic development and rebranded itself as the Department of Crop Science and Genetic Improvement. This department stands as a cornerstone of the Faculty of Agriculture, Foods, and Environment, playing a pivotal role in nurturing future agricultural engineers equipped with the latest scientific knowledge, skills, and practical abilities to excel in the labor market in the field of field crop production and breeding.

Academic Programs and Specializations:

The department currently offers two undergraduate programs:

Bachelor of Science in Crop and Pasture Science
 Bachelor of Science in Genetics and Plant Breeding
 The department has a team of highly qualified and experienced academics from diverse academic backgrounds. Their expertise in various aspects of crop science and genetic improvement aligns seamlessly with the essence of the educational process. This distinguished staff enables the department to contribute significantly to Yemen's agricultural sector through research, consultancy, and training programs in various agricultural and environmental fields, including sustainable agriculture, field crop improvement, pasture management, feed industries, and biotechnology.

The department houses specialized scientific laboratories. In addition, it has a dedicated section in the faculty's educational farm that is equipped with the necessary facilities to train and prepare students in various skills within their field of specialization. The department's scientific and research laboratories are as follows:

- 1- Crop Physiology Laboratory
- 2- Crop Production Laboratory
- 3- Plant Breeding and Biotechnology Laboratory
- 4- Crop Laboratory in the Farm
- 5- Greenhouse Chamber in the Glasshouse



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Study Plan of for the Crop and Pasture Science Program (CRP)

Third Level Courses

First Semester	Second Semester
Grain and Legume Crops	Industrial and Cash Crops
Origin, Structure and Taxonomy of Crops	Design and Analysis of Agricultural Experiments
Dry Farming	Fertility and Fertilization
Forage and Pasture Crops	Weeds and Control Methods
Principles of Plant Breeding	Principles of Irrigation
Crops Physiology	Research Methodology
Crop Rotation and Farming New of reclaimed Soils	Summer Training

Fourth Level Courses

First Semester	Second Semester
Field Crops Pests	Seeds Multiplication and Testing
Field Crops Diseases	Crops Technology
Feedstuffs	Breeding of Main Field Crops
Natural Pastures	Production of Coffee and Stimulant Crops
Principles of Plant Biotechnology	Environments and Cropping systems in Yemen
Agricultural Extension and Rural Community	Field Training
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Study Plan of the Genetics and Plant Breeding Program (GEN)

Third Level Courses

First Semester	Second Semester
Grain and Legume Crops	Industrial and Cash Crops
Origin, Structure and Taxonomy of Crops	Design and Analysis of Agricultural Experiments
Dry Farming	Fertility and Fertilization
Forage and Pasture Crops	Molecular Genetic
Principles of Plant Breeding	Quantitative & Population Genetic
Crops Physiology	Research Methodology
Cytology Genetic	Summer Training

Fourth Level Courses

First Semester	Second Semester
Field Crops Pests	Seeds Multiplication and Testing
Field Crops Diseases	Breeding Crops to Resist Biotic and environmental Stresses
Genetic Engineering	Breeding of Main Field Crops
Biodiversity and Management of Genetic Resources	Applications of Biotechnology on Plant Breeding
Principles of Plant Biotechnology	Environments and Cropping systems in Yemen
Agricultural Extension and Rural Community	Field Training
-----	Graduation Project

Career Opportunities

Potential Career Opportunities for Graduates:
Agricultural engineer in agricultural extension centers
Agricultural engineer in seed multiplication institutions
Agricultural engineer in crop production projects
Specialist researcher in agricultural research centers
Specialist researcher in environmental research centers
Assistant specialist in agricultural quarantine at land, air, and sea ports
Assistant specialist in the Standards and Quality Authority
Specialist researcher in flour mills and grain silos companies
Academic positions in universities after obtaining master's and doctoral degrees in this specialization



Graduate Attributes:

Upon successful completion of the Crop and Pasture Science program, the graduate will be able to:

- Demonstrate a thorough understanding of crop and pasture science and related disciplines.**
- Demonstrate a strong desire for learning and a relentless pursuit of knowledge.**
- Effectively collaborate as part of a team, carrying out assigned tasks with accuracy and integrity.**
- Demonstrate originality in their work and avoid imitation.**
- Calmly find solutions to problems presented to them.**
- Have keen observation skills and the ability to readily identify changes.**
- Possess analytical and comparative skills.**
- Devise crop cultivation and pasture development plans tailored to environmental conditions and soil and water quality.**
- Efficiently utilize water and soil resources.**
- Cultivate crops under various production and environmental systems.**
- Develop research plans, collect, and analyze data under field and practical conditions.**
- Design and conduct experiments, reaching logical conclusions.**
- Analyze, evaluate, and optimize agricultural natural resources and select the most suitable alternatives for their development and enhancement.**