

## Department of Horticulture and Its Techniques

<b>1. Basic Information about the Program: Horticulture and Its Techniques</b>	
<b>Program Title and Final Award</b>	Bachelor of Science in Horticulture and Its Techniques
<b>Awarding Body/ Institution</b>	Faculty of Agriculture, Foods, and Environment
<b>Teaching Institution/ Responsible Department</b>	Department of <b>Horticulture and Its Techniques</b> Faculty of Agriculture, Foods, and Environment
<b>Program Type</b>	Independent (*), Joint with Other Department(s) ( ) Multi-Departmental ( )
<b>Other Departments Involved in Teaching the Program</b>	Faculty of Agriculture, Foods, and Environment
<b>Medium of Instruction</b>	Arabic
<b>Program Start Year</b>	2020/ 2021
<b>Study Mode</b>	Full-time (mandatory attendance)
<b>Place of Study</b>	Faculty Classrooms, Laboratories, and Farm
<b>System of study</b>	Annual System (Two Semesters per Year)
<b>Time Required for Graduation</b>	Four years (145 credit hours)
<b>Prerequisite Qualifications</b>	High School Certificate (Scientific Section)
<b>Required Average Grade for Admission</b>	At Least 70%
<b>Other Requirements</b>	
<b>Program Coordinator</b>	Dr. Adel Alhugami, Prof. Hasan Aldobae
<b>Date of Program Specification/ Latest Accreditation</b>	<b>The program is pursuing accreditation</b>

### **Department Vision:**

Excelling in teaching, learning, scientific research, and community service in the field of horticulture and its various techniques.

### **Department Mission:**

Striving to make its graduates distinguished models in the local and regional community to achieve a better life.

### **Department Aims:**

- ❖ Preparing and equipping a distinguished cadre of agricultural engineers in the field of horticulture and its techniques, aligned with the needs of the labor market.

- ❖ Preparing and qualifying an exceptional cadre for postgraduate studies (Master's and Ph.D.) in various horticulture fields. The department was the first to initiate a Ph.D. program in the faculty.
- ❖ Conducting scientific research related to improving and enhancing the production of various horticultural crops, addressing local challenges, and contributing to self-sufficiency.
- ❖ Establishing channels of communication, cooperation, and knowledge exchange with relevant governmental and private entities, both locally and internationally.
- ❖ Developing the students' awareness of the importance of horticultural crops and their participation in local development.
- ❖ Organizing scientific seminars, conferences, and training courses to enhance the competence of the department's academic and administrative staff and graduates.
- ❖ Providing scientific and technical consultations to various entities in different fields of the department.

### **Graduate Attributes:**

Upon successful completion of their studies, the graduate will be able to:

1. Demonstrate a comprehensive understanding of the fundamental principles, applied sciences, and modern technologies relevant to agriculture, horticulture, and food science. They will also be able to identify the various types of horticultural crops and their classification systems, production techniques, improvement, handling, storage, and marketing of various horticultural products.
2. Grasp the principles and scientific methods of utilizing modern techniques for the quantitative and qualitative improvement of horticultural products and their various techniques while effectively utilizing all available plant resources.
3. Plan, establish, manage, and operate horticultural farms, nurseries, and greenhouses.
4. Efficiently manage and utilize horticultural and agricultural resources while conserving natural resources and biodiversity.
5. Assess the status of horticultural production and use scientific and technical methods to address its challenges and elevate it by developing horticultural production techniques, handling, and marketing methods that align with the development of the country and society in the field of horticulture.
6. Successfully plan the adaptation of various horticultural techniques in accordance with quality and safety standards and diverse local conditions.
7. Demonstrate communication skills and the ability to work effectively within specialized teams with relevant stakeholders.
8. Utilize modern technologies and their applications in addressing horticultural problems, both technically and economically.

9. Formulate plans and programs for the development of work in the horticultural sector in line with the changing requirements of the horticultural labor market and its techniques.
10. Contribute to raising awareness among farmers and community members to reduce the use of agricultural pollutants and educate the community about the importance of increasing green cover as a contribution to reducing environmental pollution and improving it and its impact on the health, psychological, and social well-being of the community.
11. Demonstrate the ability to develop their skills and performance, engage in self-learning, critical thinking, effectively communicate with others, and work collaboratively within a team.
12. Pursue postgraduate studies and engage in research.

**Community services provided by the department include the following:**

1. Providing the community and the labor market with graduates with skills and competencies capable of addressing agricultural sector problems and developing them for the benefit of society.
2. Conducting seed inspection and testing for different types of horticultural crops.
3. Examining samples of medicinal and aromatic plants.
4. Conducting scientific studies and research related to addressing issues in the horticultural sector, developing it, improving production, and meeting the needs of the market and society.
5. Providing technical supervision for fruit, vegetable, medicinal, and aromatic plant farms.
6. Providing consultancy, holding seminars, and training in various areas, including:
  - Establishing fruit, vegetable, medicinal, and aromatic plant farms.
  - Establishing and managing nurseries and greenhouses.
  - Designing, landscaping, and maintaining gardens over the long term.
  - Establishing tissue culture and biotechnology laboratories.
  - Hydroponics and urban organic farming.

**Career Opportunities for Graduates of the Horticulture Department:**

1. Establishing and supervising fruit, vegetable, medicinal, and aromatic plant farms and orchards.
2. Working in the fields of tissue culture and biotechnology.
3. Supervising and managing greenhouses in general.
4. Cultivating and producing fruits, vegetables, and ornamental plants.

5. Designing and landscaping gardens, parks, and recreational areas inside and outside cities.
6. Working in the agricultural quarantine sector at land, sea, and air ports.
7. Working in local, regional, and international official institutions, bodies, and organizations.
8. Working in private projects and companies in various branches of horticulture.
9. Providing training and consultations in establishing fruit, vegetable, medicinal, and aromatic plant farms, as well as designing and landscaping gardens.
10. Providing training and consultations in establishing tissue culture and biotechnology laboratories, nurseries, and greenhouses.
11. Providing training and consultations in the fields of hydroponics and urban organic farming.
12. Providing training and consultations in seed testing, seed examination, and examining samples of medicinal and aromatic plants.

**Potential Employers and Career Opportunities for Graduates of the Horticulture Department:**

- Ministry of Agriculture
- General Authority for Agricultural Research and Extension
- Agricultural Development Authority
- Quality and Standards Laboratories
- Tissue Culture and Biotechnology Laboratories
- Agricultural Quarantine
- Agricultural Supplies Quality Control Departments
- Seed Companies
- Small and Micro Enterprise Development Agency
- Private and Public Garden Design and Landscaping
- Various Types of Horticulture Production Farms

**Horticulture Science and its Techniques Program**

**Program Mission:**

Striving to fulfill the department's mission by providing outstanding courses in horticulture and its techniques, delivered by a qualified teaching staff, to produce competent and sought-after graduates who contribute to achieving the aims of the department, faculty, and university and attaining excellence at the local and regional levels.

**Program Aims**

- 1) Meeting the needs of high school graduates to join this specialization and reduce educational dropout rates.
- 2) Offering outstanding courses and fostering outstanding students through a professional teaching staff.
- 3) Enhancing scientific research in horticulture and its techniques and effectively contributing to addressing relevant societal issues.
- 4) Producing competent graduates equipped with extensive knowledge and advanced skills, enabling them to compete effectively and achieve the aims of the department, faculty, university, and higher education.
- 5) Establishing partnerships and collaborating with local and Arab universities in horticulture and its techniques through joint research projects and local and regional exchange visits.
- 6) Creating and developing a stimulating learning environment that empowers students to compete, be creative, and achieve excellence, fostering their desire to pursue higher education. Securing a promising professional future for students in the field of horticulture and its techniques.

### **Undergraduate Program Courses for Departments of the Faculty of Agriculture, Foods, and Environment - First and Second Levels**

<b>First Level Courses</b>					
<b>First Semester</b>			<b>Second Semester</b>		
<b>Course code</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>Course code</b>	<b>Course Title</b>	<b>Credit Hours</b>
UR001	Arabic Language (1)	2	FR001	Physics & Meteorology	3
UR006	Islamic Culture	3	FR006	Principles of Statistics	2
FR111	General Chemistry	3	FR111	Organic Chemistry	3
FR112	General Botany	3	FR112	Principles of Agricultural Economics	2
FR113	Mathematics	2	FR113	General Zoology	3
FR114	Agriculture in Yemeni Environment	1	FR114	Principles of Ecology	2
UR007	National culture	2	UR002	Arabic Language (2)	2
FR115	Geology	1	UR008	Conflict with the Israeli enemy	2
<b>Total</b>		<b>17</b>	<b>Total</b>		<b>19</b>

**Undergraduate Program Courses for Departments of the Faculty of  
Agriculture, Foods, and Environment - First and Second Levels**

Second Level Courses					
First Semester			Second Semester		
Course code	Course Title	Credit Hours	Course code	Course Title	Credit Hours
FR211	Soil Fundamentals	2	FR221	Principles of Food Science	2
FR112	General Microbiology	3	FR222	Principles of Crops Protection	2
FR113	Biochemistry	3	UR004	English Language (2)	2
FR114	Principles of Animal Production	2	FR127	Principles of Genetics	2
UR003	English Language (1)	2	FR223	Principles of Horticulture	2
FR114	Principles of Crops Production	2	FR224	Plant Physiology	2
FR215	Principles of Agricultural Engineering	2	FR225	Principles of Human Nutrition	2
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Total		16	Total		17

**Undergraduate Courses for the Horticulture and Its Techniques Program (HRT)  
Department of Horticulture and Its Techniques**

Third Level Courses					
First Semester			Second Semester		
Course code	Course Title	Credit Hours	Course code	Course Title	Credit Hours
Hrt311	Fruit Trees Physiology	3	Hrt321	Nurseries and Horticultural Farms	3
Hrt312	Production of Cold and Moderate Season Vegetables	3	Hrt322	Production of Warm Season Vegetables	2
Sol315	Irrigation and Fertilization of Horticultural Crops	2	Hrt323	Deciduous Fruit Production	3
Hrt313	Plant Biotechnology	3	Hrt324	Physiology of Vegetable Crops	3
Hrt314	Evergreen Fruit Production	3	Hrt325	Classification, Production and Uses of Ornamental Plants	3
Hrt426	Plant Tissue Culture	3	Fr315	Agricultural Extension and Rural Community	2
Hrt315	Applications in Design and Analysis of Experiments	3	Aec328	Horticultural Farms Management and Marketing	2
Hrt316	Urban and Organic Agriculture	2	Hrt327	Summer Training	1
Total		22	Total		19

<b>Fourth Level Courses</b>					
<b>First Semester</b>			<b>Second Semester</b>		
<b>Course Code</b>	<b>Course Title</b>	<b>Credit Hours</b>	<b>Course code</b>	<b>Course Title</b>	<b>Credit Hours</b>
Hrt411	Forests Environment and Natural Yemeni Reserves	3	Hrt421	Breeding of Fruit Trees and Perennials	2
Hrt412	Viticulture Production	2	Hrt422	Production of Medicinal and Aromatic Plants	3
Hrt413	Vegetable Production Technology Under the Conditioned Environment	3	Hrt423	Production of Cut flowers and Ornamental Bulbs	2
PIP418	Pests and Diseases of Horticultural Crops	3	Hrt424	Vegetable and Herbaceous Plants' Seed Production	3
Hrt414	Design and Landscape Gardening	2	Hrt425	Horticultural Plants in Arid Regions	2
Hrt415	Breeding of Vegetable and Herbaceous Plants	2	Hrt426	Stimulant Horticultural Trees	2
Hrt416	Post-Harvest Technology	3	Hrt427	Field Training and Research Project	3
<b>Total</b>		<b>18</b>	<b>Total</b>		<b>17</b>