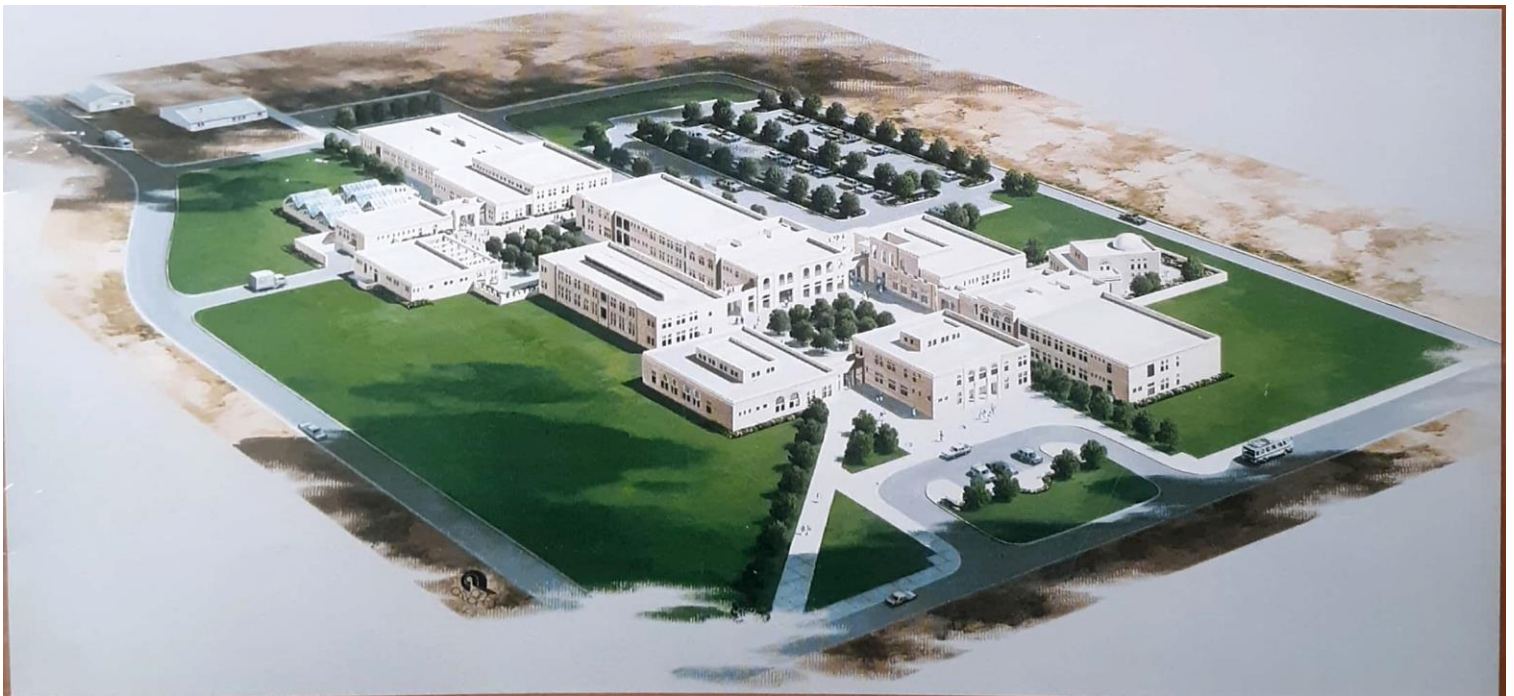


Student Guide College of Agriculture, Food and Environment



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Guide of: Faculty of Agriculture, Foods, and Environment

About:

The Faculty of Agriculture, Foods, and Environment at Sana'a University was established in 1982 under Republican Decree No. 51 of 1982, originally as the Faculty of Agriculture. It admitted its first batch of students in the academic year 1984–1985 (1404–1405 Hijri), with 25 students in the first semester and 60 students in the second semester of the same year. Since then, the faculty has significantly increased its admission capacity and now accepts over 400 students annually. Currently, there are 1394 students enrolled in the faculty across all levels. The first batch of students graduated at the end of the second semester of 1987–1988. Initially, the faculty occupied a part of the buildings belonging to the Faculty of Commerce and Economics. However, in March 1988, an educational farm was inaugurated, and the foundation stone for the new buildings of the Faculty of Agriculture was laid nearby, within the university campus. Starting from the academic year 1988–1989, the educational farm began its active operation, serving as a training and research facility, particularly focusing on poultry and sheep farming as well as cultivating various fields. The current new building was inaugurated at the beginning of the academic year 1990–1991.

Despite the difficult circumstances facing the country, the university has witnessed significant developments and updates in the academic field. There have been notable progress and updates, specifically through the revision and specification of all academic programs within the faculty. Moreover, the faculty's name has been changed to better align with the requirements of development and community service. This change was officially authorized by the university rector's resolution number (570) dated December 30, 2020, adopting the current name "Faculty of Agriculture, Foods, and Environment" instead of the previous "Faculty of Agriculture." Furthermore, the department names have undergone modification, updates, and approval by both the faculty and its academic departments. This was officially endorsed by the university rector's resolution number (51) dated January 26, 2021, which approved the academic programs of the departments as well as the specifications of their courses. In addition to the bachelor's degree, the faculty grants diplomas, master's degrees, and doctoral degrees, each in its own specialization.

Departments and Academic Programs of the Faculty of Agriculture, Foods, and Environment:

SN	Department	Program
1	Crop Science and Genetic Improvement	Crop and Pasture Science
		Genetics and Plant Breeding
2	Horticulture and Its Techniques	Horticulture Science and Techniques
3	Food Science and Nutrition	Food Science and Nutrition
		Human Nutrition
4	Plant Protection	Plant Protection
5	Animal Resources	Animal Resources
6	Agricultural Engineering and Modern Technologies	Agricultural Engineering and Modern Technologies
		Irrigation Systems Engineering and Technology
7	Soil, Water, and Environment	Soil, Water, and Environment
		Environment and Sustainable Agricultural Development
8	Agricultural Economics	Agricultural Economics and Cooperation
		Agricultural Extension and Rural Development
		Agribusiness Management

Faculty Mission

Providing educational programs that achieve sustainable development, meet quality requirements, and develop human capabilities to prepare qualified graduates to work in various agricultural, food, and environmental fields at the local and regional levels. In addition, conducting scientific and applied research to serve the community and support continuous development within a framework of teamwork, excellence, and transparency.

Faculty Aims:

- 1) Preparing graduates equipped with scientific knowledge and skills that qualify them to compete in the labor market, contribute to the development of the agricultural sector, and contribute to achieving food security in the Republic of Yemen.
- 2) Contributing to the graduation of qualified scientific cadres holding master's and doctoral degrees to support universities and institutions related to agricultural, food, and environmental specializations.

- 3) Employing scientific research to contribute to the comprehensive development of the agricultural sector, solve its problems, and promote the agricultural (plant and animal), food, and environmental sectors.
- 4) Expanding the scope of benefiting from the faculty's activities and services to include the Yemeni community and aligning them with the developmental needs and local environment.
- 5) Developing academic, material, and infrastructure capacities.
- 6) Updating and developing the faculty's plans, continuously reviewing the faculty's development plans and programs, rationalizing and developing the working environment, and committing to the quality of the faculty's various educational, research, and professional outputs, guided by international specifications and references.
- 7) Keeping pace with global progress and development in scientific knowledge and agricultural and food technologies, maximizing their application in developing the capacities of the agricultural community and its institutions, and encouraging the continuation of self-learning at the individual, group, and institutional levels through training programs and community services.
- 8) Fostering a spirit of teamwork to achieve the aims and mission of the faculty.

Graduate Attributes of the Faculty of Agriculture, Foods, and Environment

1. Capable of effectively transferring scientific knowledge in the fields of agricultural sciences, extension, and sustainable development.
2. Possessing knowledge of the Yemeni agricultural sector, its challenges, and the ability to contribute to developing appropriate solutions.
3. Capable of driving significant changes in the livelihoods of Yemeni agricultural workers by utilizing various technologies in agricultural production development programs.
4. Demonstrating the ability to shoulder professional and ethical responsibilities and work collaboratively.
5. Capable of effectively interacting with local institutions and contributing to the establishment of effective indicators that ensure growth.
6. Capable of developing rural agricultural product technologies by introducing advanced techniques into the manufacturing process of various national agricultural products.
7. Recognizing the general interests and trends in food production and sustainable development while prioritizing environmental protection and natural resource conservation.

Admission and Registration Guide for the Faculty of Agriculture, Foods, and Environment for the Academic Year 2021-2022

Application and Registration Procedures:

The application and registration process is conducted through the unified electronic portal (<http://oasyemen.net>).

Application and Registration Dates:

Each year, the application and registration process commences prior to the beginning of the academic year, as per the official announcement by the Office of the Vice Rector for Student Affairs.

Average Grade Requirement:

55% for general high school graduates and graduates of vocational high schools in the field of agriculture (please check the Unified Electronic Portal before application in case of any changes).

Mode of Study:

Regular

Admission Capacity:

The admission capacity is 600 students.

Application and Registration Fees:

Application and registration fees are as specified on the Unified Electronic Portal.

Admission and Registration Fees:

The admission and registration fees amount to 11,650 Yemeni rials, divided into activity fees and government fees.

System of Study:

First and Second Years: The study is general (it includes general culture courses + basic sciences related to the Faculty of Agriculture, Foods, and Environment).

Third and Fourth Years: Students are distributed among the 14 specializations available in the faculty.

Admission and Registration Dates:

Once the lists of accepted students are approved on the electronic portal, the admission and registration process commences. Students are notified about their acceptance, and the admission process extends for a maximum duration of 20 days from the date of announcing the lists of accepted students.

Application, Admission, and Registration Requirements:

- 1- Applications are submitted through the electronic portal. Application fees can be paid at Yemen Post offices or via CAC Bank (Mobile Money).
- 2- Applicants must hold a high school certificate (scientific section) with a minimum GPA of 55%. Applicants with a vocational high school certificate in agriculture, having achieved a minimum GPA of 55%, are also eligible.
- 3- A high school certificate is considered valid for a maximum duration of 6 years by the university. If the applicant holds a subsequent qualification, the validity duration of the high school certificate will be calculated from the date of the latest qualification, provided that the subsequent qualification is not less than two academic years.
- 4- Applicants who have obtained their high school certificate from outside Yemen will not be admitted into the university unless their documents are authenticated by the Ministry of Education in Sana'a.
- 5- Applicants who have obtained their high school certificate from governorates not under the control of the Sana'a government from the year 2015/2016 onwards will not be admitted into the university unless their documents are authenticated by the Ministry of Education in Sana'a.
- 6- High school graduates of the last year are eligible to join the faculty if their general results are announced during the application period. They must present a temporary certificate issued by the Ministry of Education.

Application and Registration Mechanism:

- 1- Applications are submitted through the electronic portal.
- 2- Applicants must select the university and faculty they wish to enroll in.
- 3- Applicants must carefully follow the instructions during the application on the electronic portal and enter all the required student data completely.
- 4- A payment deposit slip for application fees will be displayed at the end.
- 5- The applicant must pay the fees. Once the payment is made, the application to the faculty will be deemed successful. The applicant must keep the payment receipt.

Required Documents for Admission and Registration:

- 1- The original high school certificate, along with two true copies.
- 2- A copy of the personal ID or passport.
- 3- 12 personal photos (4x6) with a clear white background.
- 4- A copy of the payment receipt for the admission and registration fees (activities and governmental fees amounting to 11,650 Yemeni rials).
- 5- Students from outside Yemen must provide the original high school certificate, two true copies, and the authenticated equivalency certificate.
- 6- Students whose high school certificate has exceeded the specified validity duration must submit a copy of all documents obtained after high school.

Admission and Registration Mechanism:

- 1- Following the announcement of accepted student lists, all accepted students have fifteen (15) calendar days to report to the faculty.
- 2- Accepted students must attend in person to receive their registration file and complete the required information.
- 3- Students will be issued a payment slip number by the faculty, which must be used to complete payment at the post office.
- 4- A complete set of required documents must be submitted to the designated file disbursement committee within the faculty.
- 5- Upon successful document submission, students will receive a receipt or student ID card from the committee, confirming their enrollment in the faculty.
- 6- To finalize the registration formalities, all accepted students are required to visit the faculty within the designated timeframe.

***Requirements for Assigning Students to Specific Specializations:**

1. All second-year students expected to advance to the third level must choose three different preferences from the faculty's departments, without duplication, ranked according to their priority.
2. Student placement into specializations will be determined by a committee, considering the capacity of each department. For departments with high demand and competition, priority will be given to students with the highest grades in the relevant courses associated with the specializations, as outlined in the table below. The ranking will be based on the average percentage score achieved by students in these courses.
3. The following table shows the courses related to each specialization, through which students are evaluated based on the grades obtained in these courses.
- 4.

SN	Department	Program	Core Courses for Specialization
1	Crop Science and Genetic Improvement	Crop and Pasture Science	Fundamentals of Crop Production - Plant Physiology - General Botany
		Genetics and Plant Breeding	Fundamentals of Crop Production - Principles of Genetics - General Botany
2	Horticulture and Its Techniques	Horticulture Science and Techniques	Fundamentals of Horticulture - Plant Physiology - General Botany
3	Food Science and Nutrition	Food Science and Nutrition	Fundamentals of Food Science - General Microbiology - Biochemistry
		Human Nutrition	Fundamentals of Food Science - Fundamentals of Human Nutrition - Biochemistry
4	Plant Protection	Plant Protection	Fundamentals of Crop Protection - General Microbiology - General Botany

5	Animal Resources	Animal Resources	Fundamentals of Animal Production - Biochemistry - General Zoology
6	Agricultural Engineering and Modern Technologies	Agricultural Engineering and Modern Technologies	Fundamentals of Agricultural Engineering - Mathematics -
		Modern Irrigation Systems Engineering and Technology	Fundamentals of Agricultural Engineering - Physics and Meteorology
7	Soil, Water, and Environment	Soil, Water, and Environment	Fundamentals of Ecology - General Chemistry - Fundamentals of Irrigation
		Environment and Sustainable Agricultural Development	Fundamentals of Ecology - General Zoology - General Botany
8	Agricultural Economics	Agricultural Economics and Cooperation	Fundamentals of Agricultural Economics - Principles of Statistics - Computer Skills
		Agricultural Extension and Rural Development	Fundamentals of Agricultural Economics - Principles of Statistics - Computer Skills
		Agribusiness Management	Fundamentals of Agricultural Economics - Principles of Statistics - Computer Skills

* **Note:** These requirements are subject to change and are updated annually as approved by the Faculty Council.

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

First Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
001	UR	UR	Arabic (1)	2	121	FR	FR	Physics and Meteorology	3
006	UR	UR	Islamic Culture	3	122	FR	FR	Principles of Statistics	2
111	FR	FR	General Chemistry	3	123	FR	FR	Organic Chemistry	3
112	FR	FR	General Botany	3	124	FR	FR	Fundamentals of Agricultural Economics	2
113	FR	FR	Mathematics	2	125	FR	FR	General Zoology	3
114	FR	FR	Agriculture in Yemeni Environment	1	126	FR	FR	Fundamentals of Ecology	1
007	UR	UR	National Culture	2	002	UR	UR	Arabic (2)	2
115	FR	FR	Geology	2	008	UR	UR	Arab-Israeli	2

								Conflict	
Total				18	Total				18

Second Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
211	FR	FR	Fundamentals of Soil	2	221	FR	FR	Fundamentals of Food Science	2
212	FR	FR	General Microbiology	3	222	FR	FR	Fundamentals of Crop Protection	2
213	FR	FR	Biochemistry	3	004	UR	UR	English (2)	2
214	FR	FR	Fundamentals of Animal Production	2	127	FR	FR	Principles of Genetics	2
003	UR	UR	English (1)	2	223	FR	FR	Fundamentals of Horticulture	2
215	FR	FR	Fundamentals of Crop Production	2	224	FR	FR	Plant Physiology	2
216	FR	FR	Fundamentals of Agricultural Engineering	2	225	FR	FR	Fundamentals of Human Nutrition	2
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Total				16	Total				17

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Department of Crop Science and Genetic Improvement

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:

A- Bachelor of Science in Crop and Pasture Science

B- 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.

Teaching Staff		Assistant Staff		Technical Staff		Contractual Staff	
Academic Rank	Number	Position	Number	Degree	Number	Degree	Number
Professor	4	Instructor	1	Master's Degree	1	---	---
Associate Professor	5	Demonstrator	0	Bachelor's degree	0	Bachelor's degree	5
Assistant Professor	3						

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

*** 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.

• 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.

• 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.

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.

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

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

**Undergraduate Courses for the Crop and Pasture Science Program (CRP) -
Department of Crop Science and Genetic Improvement**

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	CRP	CRP	Grain and Legume Crops	3	321	CRP	CRP	Industrial and Cash Crops	3
312	CRP	CRP	Origin, Structure, and Taxonomy of Crops	3	322	CRP	CRP	Design and Analysis of Agricultural Experiments	3
313	CRP	CRP	Dry Farming	3	325	SOL	SOL	Fertility and Fertilization	3
314	CRP	CRP	Forage and Pasture Crops	3	323	CRP	CRP	Weeds and Control Methods	3
315	CRP	CRP	Fundamentals of Plant Breeding	3	313	SOL	SOL	Fundamentals of Irrigation	3
316	CRP	CRP	Crop Physiology	3	324	CRP	CRP	Research Methods	3
317	CRP	CRP	Crop Rotation and Farming of Reclaimed Soils	2	325	CRP	CRP	Summer Training	1
Total				20	Total				19

Fourth Level Courses

First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
418	PLP	PLP	Field Crop Pests	3	421	CRP	CRP	Seed Multiplication and Testing	3
312	PLP	PLP	Field Crop Diseases	3	422	CRP	CRP	Crop Technology	3
411	CRP	CRP	Feedstuffs	3	423	CRP	CRP	Breeding of Main Field Crops	3
412	CRP	CRP	Natural Pastures	3	424	CRP	CRP	Coffee and Stimulant Crops Production	2
413	CRP	CRP	Fundamentals of Plant Biotechnology	3	425	CRP	CRP	Yemeni Crop Environments and Systems	2
315	FR	FR	Agricultural Extension and Rural Community	3	426	CRP	CRP	Field Training	2
					427	CRP	CRP	Graduation Project	3
Total				18	Total				18

Undergraduate Courses for the Genetics and Plant Breeding Program (GEN) - Department of Crop Science and Genetic Improvement

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	CRP	CRP	Grain and Legume Crops	3	321	CRP	CRP	Industrial and Cash Crops	3
312	CRP	CRP	Origin, Structure, and Taxonomy of Crops	3	322	CRP	CRP	Design and Analysis of Agricultural Experiments	3
313	CRP	CRP	Dry Farming	3	325	SOL	SOL	Fertility and Fertilization	3
314	CRP	CRP	Forage and Pasture Crops	3	323	GEN	GEN	Molecular Genetics	3
315	CRP	CRP	Fundamentals of Plant Breeding	3	324	GEN	GEN	Quantitative Genetics and Population Genetics	3
316	CRP	CRP	Crop Physiology	3	324	CRP	CRP	Research Methods	3

317	GEN	GEN	Cytology Genetics	2	325	CRP	CRP	Summer Training	1
Total				20	Total				19

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
418	PLP	PLP	Field Crop Pests	3	421	CRP	CRP	Seed Multiplication and Testing	3
312	PLP	PLP	Field Crop Diseases	3	422	GEN	GEN	Breeding Crops to Resist Biotic and Environmental Stresses	3
411	GEN	GEN	Genetic Engineering	2	423	CRP	CRP	Breeding of Main Field Crops	3
412	GEN	GEN	Biodiversity and Genetic Resources Management	3	424	GEN	GEN	Biotechnology and Its Applications in Plant Breeding	3
413	CRP	CRP	Fundamentals of Plant Biotechnology	3	425	CRP	CRP	Yemeni Crop Environments and Systems	2
315	FR	FR	Agricultural Extension and Rural Community	3	426	CRP	CRP	Field Training	2
					427	CRP	CRP	Graduation Project	3
Total				17	Total				19

Department of Horticulture and Its Techniques

The Department of Horticulture and its Techniques is one of the major and important departments in the Faculty of Agriculture, Foods, and Environment at Sana'a University. It was established in 1996/1997 and includes the following specializations:

1. Pomology
2. Olericulture
3. Floriculture
4. Medicinal and Aromatic Plants
5. Gardening and Landscapes
6. Forestry

The department takes pride in its exceptional academic staff, who are highly specialized and well-qualified, having graduated from renowned universities in the United States of America, the People's Republic of China, India, Malaysia, and countries in the Arab world, particularly Iraq and Egypt. It also has a teaching assistant staff of instructors and demonstrators, in addition to specialized technical staff. The department's staff carries out the tasks assigned to them, including teaching, supervision, and the practical application of the aforementioned specializations in bachelor's, master's, and doctoral degrees.

Teaching Staff		Assistant Staff		Technical Staff		Contractual Staff	
Academic Rank	Number	Position:	Number	Degree	Number	Degree	Number
Professor	2	Instructor	1	Master's Degree	2	---	---
Associate Professor	4	Demonstrator	5	Bachelor's degree	4	Bachelor's degree	3
Assistant Professor	9						

Department Infrastructure:

The department has its own sector within the farm, as well as a unit for clean agriculture, greenhouses, and nurseries. The department is responsible for overseeing the faculty gardens and also participates significantly in the management of the faculty's plant tissue culture unit. The department also has two laboratories in the department building, which also houses a number of offices for faculty members and assistants.

The department also offers postgraduate programs (Master's and Ph.D.).

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

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

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	HRT	HRT	Fruit Tree Physiology	3	321	HRT	HRT	Nurseries and Horticultural Farms	3
312	HRT	HRT	Cool and Temperate Season Vegetable Production	3	322	HRT	HRT	Warm Season Vegetable Production	2
315	SOL	SOL	Irrigation and Fertilization of Horticultural Crops	2	323	HRT	HRT	Deciduous Fruit Production	3
313	HRT	HRT	Plant Biotechnology	3	324	HRT	HRT	Vegetable Crop Physiology	3
314	HRT	HRT	Evergreen Fruit Production	3	325	HRT	HRT	Classification, Production, and Uses of Ornamental Plants	3
326	HRT	HRT	Plant Tissue Culture	3	315	FR	FR	Agricultural Extension and Rural Community	2
315	HRT	HRT	Applications in Design and Analysis of Experiments	3	328	AEC	AEC	Horticultural Farm Management and Marketing	2
316	HRT	HRT	Organic and Urban Agriculture	2	327	HRT	HRT	Summer Training	1
Total				22	Total				19

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	HRT	HRT	Yemeni Forests and Natural Reserves	3	421	HRT	HRT	Fruit Tree and Perennial Plant Breeding	2
412	HRT	HRT	Viticulture Production	2	422	HRT	HRT	Medicinal and Aromatic Plant Production	3
413	HRT	HRT	Vegetable Production Technology Under the Conditioned Environment	3	423	HRT	HRT	Cut Flower and Ornamental Bulb Production	2
418	PLP	PLP	Pests and Diseases of Horticultural Crops	3	424	HRT	HRT	Vegetable and Herbaceous Plant Seed Production	3
414	HRT	HRT	Garden Design and Landscaping	2	425	HRT	HRT	Horticultural Plants in Arid	2

								Regions	
415	HRT	HRT	Vegetable and Herbaceous Plant Breeding	2	426	HRT	HRT	Stimulant Horticultural Trees	2
416	HRT	HRT	Post-Harvest Handling Technology	3	427	HRT	HRT	Field Training and Research Project	3
Total				18	Total				17

Department of Food Science and Nutrition

The Department of Food Science and Nutrition was established in 1993 as the Department of Food Science and Technology. Since its inception, the department has been actively involved in studies and research on food processing. The department has successfully graduated 19 batches of undergraduate students and has been highly active in postgraduate studies and scientific research. The Master's program was initiated in the academic year 2002/2003, and dozens of researchers have graduated from the department with Master's degrees in various scientific fields.

The department currently has 9 highly qualified teaching staff, including 5 professors and 4 associate professors. It has 13 assistant teaching staff, four of whom are instructors and three are on overseas scholarships. There are nine demonstrators. The teaching staff possesses extensive experience in various fields of food science and technology, dairy science, and human nutrition. They also provide consulting services to both the public and private sectors, enabling the department to offer scientific services, expertise, and advice to many relevant entities.

The department has well-equipped laboratories for teaching and training students. However, some of this equipment requires maintenance, while others necessitate an operating budget and power supply.

The department also houses specialized scientific laboratories for chemistry, microbiology, sensory evaluation, and research. In addition, it features dedicated manufacturing facilities, including laboratories for grain processing, oil and fat processing, dairy processing, and fruit and vegetable processing. All these specialized laboratories utilize advanced equipment that demands regular maintenance.

The department's curriculum was designed to be aligned with the labor market, enabling graduates to work efficiently and effectively to meet the needs of related companies and institutions. In addition, it prepares graduates to participate in scientific research fields, serve the local community, or work for international institutions.

The department offers two programs:

- 1- **Food Science and Nutrition:** This program consists of 30 courses distributed over two academic years, with two semesters per year.
- 2- **Human Nutrition Program**

The department offers a Master's program, which currently has around 50 students from the Faculty of Agriculture, Foods, and Environment and other faculties such as the Faculty of Medicine, Faculty of Pharmacy, and Faculty of Science.

Department Vision:

Excelling in teaching, learning, scientific research, and community service in the fields of food science and human nutrition.

Department Mission:

The Department of Food Science and Nutrition aims to qualify and prepare highly skilled scientific and research cadres who are capable of meeting the demands of the labor market. This is achieved through a strong commitment to quality, development, continuous self-learning, and scientific research, all of which serve to benefit and advance the community. The department also strives to foster productive collaborations with scientific institutions and relevant local communities, with the ultimate goal of achieving sustainable development of both human and natural resources.

Department Aims:

1. Preparing qualified cadres in the fields of food science and nutrition who can meet the demands of the labor market and serve the community while maintaining a strong connection with them.
2. Conducting scientific research related to nutrition, food technology, and dairy industries and studies to contribute to improving nutrition and developing food processing, thereby enhancing self-sufficiency and achieving food security.
3. Developing students' abilities and skills to raise nutritional awareness in the community and participate in development and interaction with the environment.
4. Establishing links between research, scientific activities, and community service by creating channels of cooperation and communication with government agencies, the private sector, research centers, and relevant local and international organizations.
5. Organizing scientific conferences, seminars, and training courses to enhance the competence of graduates and employees.
6. Exchanging scientific expertise with Arab and international universities in the field of food and nutrition, providing technical consultations, and conducting specialized scientific studies that meet the requirements of the labor market and serve the community.
7. Strengthening cooperation and coordination with international organizations and bodies related to the field.

8. Solving problems related to increasing production while ensuring quality and safety in the food and dairy industries based on modern scientific principles that align with the requirements of the local and global markets.

Career Opportunities for Graduates of the Department of Food Science and Nutrition

- ✓ Food and dairy companies and factories throughout the country.
- ✓ Grain silos and flour mills.
- ✓ Yemeni Standardization and Metrology Organization (YSMO).
- ✓ Food inspection and monitoring bodies such as the Environmental Health Department.
- ✓ Customs Authority (quality control laboratories) at customs outlets such as airports, seaports, and land crossings.
- ✓ Ministries of Higher Education and Technical Education (such as Yemeni universities and agricultural and veterinary institutes).
- ✓ Ministry of Agriculture, the Agricultural Cooperative Union, and dairy farms in various governorates.
- ✓ Rural development projects of international organizations.
- ✓ International organizations and institutions related to the field, such as international health organizations, the Food and Agriculture Organization, and the World Food Program.
- ✓ Ministry of Public Health and Population (nutrition departments, central health laboratories, therapeutic nutrition, and meal planning sections in hospitals).
- ✓ Food supervision of main hospital restaurants, airlines, sports teams, army nutrition, and other human gatherings.
- ✓ Yemen Economical Corporation (YECO) (food industry sector, refrigerated warehouses, automated bakeries).
- ✓ Social Fund for Development projects.
- ✓ Projects and freelance work in the field of food and dairy product manufacturing.
- ✓ These are in addition to job opportunities available outside Yemen in similar and diverse fields for food science graduates.

Graduate Attributes:

Upon successful completion of this program, the graduate will be able to:

- Acquire the skills, knowledge, and information necessary to conduct studies and research in the fields of food science and nutrition.
- Understand the basic sciences and their applications in the fields of agricultural science, food technology, and nutrition.
- Plan and implement agricultural and industrial operations to produce safe and high-quality food.

- Understand and analyze issues related to agricultural, food, and nutritional problems to find the most appropriate solutions.
- Develop the skills necessary to develop food products that meet consumer preferences and ensure food safety and health.
- Acquire skills in dealing with modern technologies related to the development and improvement of the quality of food products, the application of correct specifications and standards in accordance with consumer preferences, and ensuring food safety and health.
- Develop nutritional guidance and education programs to raise nutritional awareness, change unhealthy dietary patterns, plan meals, and conduct nutritional assessments for individuals and communities.
- Implement good agricultural practices and food processing skills with high nutritional value and quality.
- Keep up with the requirements of the labor market by being familiar with the latest developments in the fields of food science and human nutrition.
- Conduct authentic, applied research in the field to meet the needs of the labor market and serve the community.
- Develop a variety of skills and knowledge, such as information technology, food analysis, self-learning, critical thinking, and communication with others.

Department Services Provided to the Community

1. Providing the community with qualified and trained graduates to work in the field of food processing and quality assessment in factories, customs outlets, and human nutrition programs.
2. Transferring new ideas, research findings, and technology to application in the fields of industry and investment.
3. Conducting technical and economic feasibility studies for food and dairy industry projects.
4. Providing consultancy services to food inspection and control authorities and reviewing standard specifications for food products.
5. Conducting quality control and inspection tests for raw materials and imported and local food products.
6. Conducting scientific research to enhance and improve food processing operations and develop new food products.
7. Developing specialized training programs for professionals in the food industry to enhance their knowledge and specialized skills.
8. Participating in the development of rural food industries and rural women's development projects.
9. Training graduates and low-income individuals on establishing small productive projects for food and dairy product manufacturing to improve income levels and combat unemployment and poverty.
10. Providing general knowledge about food through workshops, seminars, and conferences.

Undergraduate Courses for the Food Science and Nutrition Program (FSN) - Department of Food Science and Nutrition

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	FSN	FSN	Liquid Milk Processing	3	321	FSN	FSN	Technology of Fruits & Vegetable Products	3
312	FSN	FSN	Food Chemistry and Analysis	3	322	FSN	FSN	Meat and Fish Technology	3
313	FSN	FSN	Food Processing and Preservation	3	323	FSN	FSN	Dairy Chemistry and Analysis	3
314	FSN	FSN	Community Nutrition	2	324	FSN	FSN	Cheese and Fermented Milk Processing	3
316	ANR	ANR	Meat and Milk Production	3	325	FSN	FSN	Food Legislation and Regulations	2
317	HRT	HRT	Handling and Storage of Horticultural Products	3	326	FSN	FSN	Food Packaging	2
315	FR	FR	Agricultural Extension and Rural Community	2	327	FSN	FSN	Nutritional Status Assessment	2
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Total				19	Total				19

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	FSN	FSN	Technology of Cereal & Sugar Crops	3	421	FSN	FSN	Edible Oils and Fats Technology	3
412	FSN	FSN	Food Microbiology and Fermentation	3	422	FSN	FSN	Food Quality Evaluation	2
413	FSN	FSN	Technology of Fatty Dairy Products and Ice Cream	3	423	FSN	FSN	Dairy Microbiology and its Products	3
421	ETA	ETA	Food Processing Engineering	3	424	FSN	FSN	Food Plants Sanitation	2
414	FSN	FSN	Therapeutic Nutrition (1)	2	425	FSN	FSN	Therapeutic Nutrition (2)	2
415	FSN	FSN	Functional Foods	2	426	FSN	FSN	Automated Food Analysis	3
416	FSN	FSN	Field Training	2	428	AEC	AEC	Food Plants Economics	2

								and Management	
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Total				18	Total				18

**Undergraduate Courses for the Human Nutrition Program (HN) -
Department of Food Science and Nutrition**

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	HN	HN	Food Metabolism	3	321	HN	HN	Nutrition and Immunity	2
312	HN	HN	Nutrition Through the Life Cycle	2	322	HN	HN	Nutritional Requirements and Meal Planning	3
312	FSN	FSN	Food Chemistry and Analysis	3	323	HN	HN	Food Security and Nutrition	2
313	FSN	FSN	Food Processing and Preservation	3	324	HN	HN	Food Technology	3
314	FSN	FSN	Nutritional Status Assessment	3	325	HN	HN	Nutrition Education and Counseling	2
314	HN	HN	Physiology	2	326	HN	HN	Nutrition and Physical Activity	2
315	FR	FR	Agricultural Extension and Rural Community	2	327	FSN	FSN	Community Nutrition	3
Total				18	Total				17

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	HN	HN	Food Service Management	2	421	HN	HN	Maternal and Child Nutrition	2
412	FSN	FSN	Food Microbiology	3	422	HN	HN	Food Hygiene and Safety	2
412	HN	HN	Research Methods	2	422	FSN	FSN	Food Quality Evaluation	2
413	HN	HN	Biostatistics	3	423	HN	HN	Nutrition in Emergency	2
414	FSN	FSN	Therapeutic Nutrition (1)	3	424	HN	HN	Nutrition and Public Health	2

415	FSN	FSN	Functional Foods	2	425	FSN	FSN	Therapeutic Nutrition (2)	3
415	HN	HN	Field Training (1)	2	425	HN	HN	Graduation Project	2
			-----	---	426	HN	HN	Field Training (2)	2
Total				17	Total				17

Upon successful completion of the academic courses, the student is required to undertake a 6-month nutrition internship in relevant institutions.

Department of Animal Resources

The Department of Animal Resources is one of the departments established after the faculty was founded. The department began offering studies in the academic year 1988–1989. Since its establishment, the department has graduated 403 students and 27 master's students by the year 2019–2020.

One student has obtained a Ph.D. in collaboration with a university in a friendly country. The department currently has a teaching staff of 12 members, including five professors, three associate professors, and four assistant professors. It also has a number of technical staff with bachelor's degrees, totaling six.

Department Vision:

Providing education that adheres to high-quality standards and academic accreditation for its graduates and conducting scientific research and field studies, utilizing the outcomes to address and resolve animal production challenges within Yemen and the surrounding region.

Department Mission:

Providing an educational and training program that equips graduates with sufficient experience in all branches of animal production, providing a high level of scientific and practical training for work in various animal production projects, conducting distinguished scientific research that contributes to the development of scientific knowledge and addresses the problems of animal production in Yemen, and serving the community to drive the wheel of development forward.

Department Aims:

- 1) Graduating highly qualified cadres equipped with advanced scientific and professional skills in various animal production fields to enable them to compete effectively in the local and regional labor markets.
- 2) Directing scientific research and field studies that contribute to the development and resolution of animal production problems and the advancement of production methods.
- 3) Continuously developing the mechanisms that contribute to the educational and research process (curricula, laboratories, farms) to provide comprehensive practical training in the implementation and management of various cyclical operations.
- 4) Graduating distinguished scientific cadres in the field of postgraduate studies (diplomas and master's degrees) in all animal production specializations.
- 5) Organizing seminars, workshops, and training courses that address the various aspects of animal production and serve the workers in this sector.

- 6) Establishing partnerships with relevant institutions and entities involved in animal and poultry production activities.

Future Aim:

Establishing specialized divisions, including:

- Animal Production Division
- Poultry Division
- Animal Health Division

Potential Career Opportunities for Graduates of the Department:

- Animal production projects
- Dairy farms
- Sheep and goat fattening projects
- Land, sea, and air outlets, as well as the Customs Authority
- Slaughterhouses, markets, and fish farms as quality control supervisors
- Central feed laboratories
- Poultry production farms and projects, as well as hatcheries
- Veterinary service centers or stations, and livestock extension centers

Graduate Attributes:

Upon successful completion of this program, the graduate will be able to:

1. Implement good agricultural practices that maximize agricultural productivity, animal and fish production, ensuring safe food production, addressing fertility issues, and overcoming low production problems.
2. Formulate a variety of balanced and cost-effective rations to ensure the production of safe animal products for human consumption.
3. Utilize agricultural resources optimally within the animal and fish wealth sector, effectively leveraging investment projects to achieve sustainable agricultural development.
4. Apply modern techniques relevant to agricultural operations, food production, and management of animal and fish farms to conduct rigorous scientific research aimed at genetic improvement, production optimization, and preservation of genetic resources.
5. Master effective communication skills within team settings, demonstrate an understanding of others' behaviors, and engage in self-learning to enhance their scientific capabilities.
6. Analyze data and information using scientific methodology to address agricultural, nutritional, animal, and fish production problems, effectively identifying and implementing optimal solutions.
7. Propose commercial production plans for animal and food resources in alignment with market systems and evaluate their environmental impact.

8. Diagnose major diseases affecting animals and fish, implement appropriate measures to prevent their spread, and safeguard the environment.
9. Elaborate on animal health care practices, the impact of animal-environment interactions, and demonstrate proficiency in laboratory skills, adhering to quality and safety standards in the field of agriculture and food.

Department Services Provided to the Community:

- Offering scientific consultations to all individuals and professionals engaged in animal production activities, encompassing the domains of nutrition and care for ruminants and poultry, animal and poultry breeding and enhancement, reproduction and artificial insemination, animal diseases, and fish production.
- Performing technical and economic feasibility studies for various animal production farms.
- Conducting specialized training courses and workshops tailored to the requirements of animal production sectors and their workforce.
- Offering technical supervision for animal and poultry production farms.
- Conducting laboratory analyses of concentrated feeds.
- Providing a comprehensive range of veterinary services to ruminants and poultry.
- Supplying university staff with animal products (meat, eggs, milk) at affordable prices.

Undergraduate Courses for the Animal Resources Program (ANR) - Department of Animal Resources

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	ANR	ANR	Ruminant Nutrition	3	321	ANR	ANR	Poultry Nutrition	3
312	ANR	ANR	Animal and Poultry Health	3	322	ANR	ANR	Aquaponics	3
313	ANR	ANR	Aquatic Animal Resources	3	323	ANR	ANR	Reproductive Physiology	3
314	ANR	ANR	Animal and Poultry Physiology	3	324	ANR	ANR	Meat Cattle Production	3
315	FR	FR	Agricultural Extension and Rural Community	2	325	ANR	ANR	Sheep and Goat Production	3
314	CRP	CRP	Forage and Pasture Crops	2	326	ANR	ANR	Poultry Diseases	3
315	ANR	ANR	Statistical Designs	3	327	ANR	ANR	Summer Training	1
Total				19	Total				19

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
417	FSN	FSN	Meat and Dairy Technology	3	421	ANR	ANR	Agricultural Animal Environment	3
411	ANR	ANR	Dairy Cattle Production	3	422	ANR	ANR	Animal Production Farms	3
412	ANR	ANR	Poultry meat Production	3	423	ANR	ANR	Animal Diseases	3
412	CRP	CRP	Natural Pastures	3	424	ANR	ANR	Genetic Improvement	3
413	ANR	ANR	Fish Production	2	425	ANR	ANR	Layer Production	3
414	ANR	ANR	Feedstuff Analysis	3	422	PLP	PLP	Apiculture	2
415	ANR	ANR	Camel and Horse Production	3	426	ANR	ANR	Graduation Project	1
Total				20	Total				18

Department of Plant Protection

The department was established in the academic year 1996–1997 to address the growing need for well-qualified scientific cadres capable of assuming the responsibilities of the agricultural renaissance in the Republic of Yemen, particularly in the field of plant protection. The department focuses on three main areas: 1) economic entomology and agricultural zoology; 2) plant sciences and its diseases; and 3) pesticide and environmental pollution sciences.

The department currently has sixteen teaching staff, including six professors, five associate professors, and five assistant professors specializing in the aforementioned specializations. In addition, there are a number of teaching assistants, including technicians, instructors, demonstrators, and those abroad on scholarships.

The department has its own beehive building, which has enabled the training of cadres in beekeeping and honey production, as well as other bee products such as wax, royal jelly, and propolis, highlighting their therapeutic importance. In addition, the department has the capacity to establish and manufacture beehives.

Department Vision:

Excelling in teaching, learning, scientific research, and community service in the field of plant protection.

Department Mission:

The department aspires to prepare qualified cadres capable of competing in the local and regional labor market and meeting the research needs necessary for the sustainable development of human and natural resources in the field of plant protection. The department also aims to link with the local community by providing scientific and research support to those working in agriculture and solving agricultural problems in the field of plant protection.

Department Aims:

- 1- Preparing qualified and competent cadres with scientific and practical expertise to achieve the highest standards of quality and excellence by providing a conducive environment for higher education and scientific research.
- 2- Conducting applied scientific research and studies to address the challenges faced by the agricultural sector in the field of plant health.
- 3- Contributing to community service by diagnosing the causes of plant diseases and pests, analyzing pesticide residues and their environmental

- impact, promoting the beekeeping sector and its products, and offering tailored scientific consultations.
- 4- Engaging faculty members in departmental seminars to foster knowledge and expertise exchange, leveraging discussions to pique the interest of faculty members and teaching assistants, instilling in students scientific thinking and discussion methodologies, and cultivating their critical research evaluation skills.
 - 5- Equipping laboratories with all necessary resources to streamline the practical aspects of various courses, upgrading lecture halls and outfitting them with audiovisual equipment, enhancing the departmental library by stocking it with the latest specialized books and periodicals, and connecting it to the internet.
 - 6- Formulating integrated management programs for the causes of plant diseases and pests in the local environment and devising modern, innovative, and non-traditional control methods.
 - 7- Establishing postgraduate programs, commencing with a master's degree in economic insects and agricultural zoology; plant sciences and its diseases; and pesticide and environmental pollution sciences.
 - 8- Emphasizing collaboration with various research institutions and the local private sector to hold specialized conferences, seminars, and scientific workshops. This collaboration aims to develop the fields of plant protection and higher education, contribute to enriching scientific research in crop protection and environmental preservation, and undertake research projects that help solve environmental problems and optimize pesticide use. Furthermore, the department keeps pace with modern developments and trends in pest control methods.

Community services provided by the department include the following:

- Organizing training courses and workshops in the fields of beekeeping, pest control, and plant diseases.
- Conducting examinations to identify the causes of plant diseases and pests and effective control methods.
- Providing consultations in the field of plant protection to relevant entities in the country and private agricultural sectors.
- Conducting research funded by both the public and private sectors to develop innovative solutions to address challenges related to plant diseases, pests, and their effective control.

Graduate Attributes:

Upon successful completion of the Plant Protection program, the graduate will be able to:

- 1- Demonstrate knowledge and understanding of the role of agricultural engineers in society.
- 2- Utilize and manage available agricultural resources.
- 3- Manage agricultural facilities related to plant protection and conservation.
- 4- Utilize appropriate technologies to address agricultural problems, particularly in the field of plant protection.
- 5- Effectively demonstrate professional skills.
- 6- Preserve natural resources and biodiversity.
- 7- Demonstrate a high level of awareness of legal, ethical, and social issues related to agriculture.
- 8- Demonstrate the ability to develop their performance and be qualified for self-directed and continuous learning.
- 9- Pursue postgraduate studies and engage in research.
- 10- Employ appropriate pest and disease control methods, prioritizing environmentally friendly approaches to minimize environmental impact.
- 11- Develop plans to prevent the spread of pests and diseases.
- 12- Plan and implement an integrated pest and disease management program.
- 13- Keep pests and diseases below the economic threshold of damage.
- 14- Assess the risks of pesticides to non-target organisms.

Potential Career Opportunities for Graduates:

- In the Ministry of Agriculture and its affiliated bodies and institutions
- As a plant protection researcher in research centers and universities
- As a plant quarantine officer at various customs ports
- As a honeybee breeding and production specialist and in apiary management
- In the private sector, companies investing in the agricultural sector
- Organizations and funds implementing agricultural projects
- As a specialist in the control of grain pests, stored materials, and public health pests
- As an advisor for companies working in the field of pesticide import and trade.

Undergraduate Courses for the Plan Protection Program (PLP) - Department of Plant Protection

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	PLP	PLP	Insect Morphology and Physiology	3	321	PLP	PLP	Plant Pathogenic Viruses	3
312	PLP	PLP	Field Crop Diseases	3	322	PLP	PLP	Pesticides Residues Analysis and Environmental Pollution	3
313	PLP	PLP	Economic Entomology	3	323	PLP	PLP	Plant Pathogenic Bacteria	3
318	CRP	CRP	General Crop Production	2	318	HRT	HRT	Horticultural Crop Production	2
314	PLP	PLP	Pesticides	3	324	PLP	PLP	Storage and Food Plants Pests	2
315	FR	FR	Agricultural Extension and Rural Community	2	325	PLP	PLP	Plant Anatomy and Classification	2
315	PLP	PLP	Plant Pathogenic Fungi	3	326	PLP	PLP	Plant Pathogens Pesticides	3
316	PLP	PLP	Biological Control	2	327	PLP	PLP	Summer Training	1
Total				21	Total				19

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	PLP	PLP	Medical and Veterinary Insects	2	421	PLP	PLP	Horticultural Crop Diseases	3
412	PLP	PLP	Biotechnology and Plant Disease Resistance	3	422	PLP	PLP	Apiculture	3
413	PLP	PLP	Plant Pathogenic Nematodes	3	423	PLP	PLP	Non-Insect Agricultural Pests	2
322	CRP	CRP	Design and Analysis of Agricultural Experiments	2	424	PLP	PLP	Integrated Pest Management	3
414	PLP	PLP	Ecology of	2	425	PLP	PLP	Plant	2

			Pests and Diseases					Physiological Diseases	
415	PLP	PLP	Pesticide Chemistry	3	426	PLP	PLP	Pesticide Formulation Technology	2
416	PLP	PLP	Insect Ecology and Ethology	3	427	PLP	PLP	Fundamentals of Pesticide Bioassay	2
417	PLP	PLP	Pesticide Toxicology	3	428	PLP	PLP	Research Project	1
Total				21	Total				18

Department of Soil, Water, and Environment

Established in 1989, following the inception of the Faculty of Agriculture, the Department of Soil, Water, and Environment initially under the name of 'Department of Soil, Water, and Agricultural Mechanization.' Over time, the agricultural mechanization division became a separate department, and its name changed to 'Department of Soil and Water'. In 2016, the department's name was further modified to 'Department of Soil, Water, and Environment.' In 2020, the department's study programs were revised to align with Yemen's agricultural requirements and environmental context, ensuring the sustainable utilization of agricultural resources.

The Department of Soil, Water, and Environment holds a distinguished position due to its multifaceted approach, encompassing the study of soil science and reclamation, water science and irrigation, water quality and suitability for irrigation, environmental science and its relationship to soil, water, and plant resources, as well as its various impacts on human and animal health. Many qualified agricultural engineers specializing in land, water, and environmental sciences have graduated from this department.

The department offers diploma, bachelor's, master's, and doctoral degrees in soil, water, and environmental sciences. Students learn a range of important subjects in the following areas:

- Irrigation Water Management
- Land Management and Reclamation
- Agricultural Environmental Management
- Soil Fertility and Fertilization
- Agricultural Soils and Terraces Maintenance
- Agricultural Soil Surveying and Classification
- Evaluation of the Quality and Suitability of Water for Agricultural Irrigation and Drinking Purposes

The department offers postgraduate programs that include three main branches:

- Diploma (GPA Improvement)
- Master's degree
- Ph.D.

The Department of Soil, Water, and Environment was the first department in the faculty to award a doctoral degree in 2006.

Teaching staff in the department:

The department has a qualified teaching staff with specializations and expertise that align with the core educational process. They come from various scientific backgrounds and hold different academic degrees.

Teaching Staff		Assistant Staff		Technical Staff		Contractual Staff	
Academic Rank	Number	Position:	Number	Degree	Number	Degree	Number
Professor	2	Instructor	6	Master's Degree	0	--	0
Associate Professor	5	Demonstrator	4	Bachelor's degree	0	Bachelor's degree	0
Assistant Professor	1						

Laboratories affiliated with the Department:

- Chemical Analysis Laboratory
- Soil Science Laboratory
- Water and Irrigation Science Laboratory
- Soil and Water Laboratory at the Farm

Department Vision:

Achieving excellence locally and regionally in education, learning, scientific research, and community service in the fields of land, water, and environmental sciences and their applications.

Department Mission:

Leading in preparing specialized cadres in soil sciences and disseminating research through the updating and development of its programs in line with scientific and technological developments, advanced educational programs, and activities related to soil sciences and natural resources, and collaborating with other departments in the development of education and scientific research.

Department Aims:

- 1- Updating the program and academic courses to meet the requirements of 21st century society.
- 2- Adopting educational courses that focus on the practical aspect to prepare graduates who meet the needs of the labor market.
- 3- Effectively contributing to enhancing the productivity of agricultural soils under diverse environmental conditions.
- 4- Emphasizing quality to enhance performance standards in education, research, and community service, leading to the attainment of academic accreditation.

- 5- Developing a scientific research strategy aligned with the need to augment the yield per unit of land and water resources, as well as the sustainable expansion of agricultural land reclamation to fulfill societal needs.
- 6- Guiding and supporting scientific research in addressing societal challenges and staying abreast of advancements in science and technology.
- 7- Encouraging local and regional collaboration to enhance education and scientific research systems.

Contributions of the Department to Community Service:

The Department of Soil, Water, and Environment has an analytical laboratory equipped with most of the chemical analysis devices, which enables it to play an effective role for students and the community. The department performs the following:

1. Providing consultations to relevant authorities in various specialized fields.
 2. Conducting courses, research, and scientific studies, and actively participating in local and international scientific conferences and seminars.
 3. Offering agricultural, environmental, and humanitarian consultancy services that contribute to enhancing food security and improving livelihoods.
 4. Conducting environmental impact assessments of various agricultural projects.
 5. Organizing specialized refresher and technical courses in soil and water sciences for staff members in government and private agricultural institutions.
- Conducting analyses for organizations, institutions, and individuals.
 - Conducting analyses of chemical fertilizers to ensure their compliance with the established specifications and standards.
 - Conducting chemical, physical, and biological analyses of soil to identify potential problems and proposing effective solutions to enhance its productivity.
 - Conducting analyses of water samples from various sources, including surface water, groundwater, rainwater, and various wastewater streams such as greywater, sewage, agricultural, livestock, and industrial wastewater.
 - Providing advice to stakeholders in the labor market on effective strategies to address problems arising from the use of analyzed water, rigorously assessing its quality and type, and determining its suitability for irrigation and drinking purposes.
 - Conducting analyses of plants to diagnose and address problems related to their growth and productivity.

Graduate Attributes:

Upon successful completion of their studies, the graduates of the Department of Soil, Water, and Environment will be able to:

- Design, install, operate, and maintain state-of-the-art soil, irrigation, and environmental systems.

- Engage in self-learning and actively pursue knowledge.
- Effectively collaborate with colleagues as part of a team, carrying out assigned tasks with accuracy and integrity.
- Calmly find solutions to problems presented to them.
- Observe and easily detect changes, with the ability to analyze and compare.
- Propose crop cultivation plans tailored to environmental conditions, and soil and water quality.
- Develop research plans, collect, and analyze data under field and practical conditions.
- Design and conduct experiments, reaching logical conclusions.
- Cultivate crops resistant to biological and environmental stresses
- Effectively interact with team members and other individuals in the workplace.
- Manage soil, environment, water, and irrigation engineering practices.

Potential Career Opportunities for Graduates:

- Agricultural extension centers and irrigation and water equipment companies
- Crop production projects
- Specialist researcher in agricultural research centers and environmental research centers
- Assistant specialist in agricultural quarantine at land, air, and sea ports
- Assistant specialist in the Standards and Quality Authority
- Academic positions in universities after obtaining master's and doctoral degrees in this field
- Water and irrigation management engineer in agricultural consulting offices

Potential Employers for the Graduates:

- Ministry of Agriculture and Irrigation and Ministry of Water and Environment
- General Corporation for Water and Sanitation
- Agricultural Research Authority and Social Fund for Development
- Humanitarian organizations in the fields of food security, water, and civil society
- Small and Micro Enterprise Promotion Service (SMEPS)
- National Irrigation Program and Yemeni Standardization and Metrology Organization (YSMO)
- Agricultural departments in each of the following:
 - Capital Secretariat (Sana'a)
 - Governorate Offices
 - Cooperative & Agricultural Credit Bank (CAC Bank)

- Private agricultural companies
- Companies and stores selling fertilizers and agricultural inputs

**First: Undergraduate Courses for the Soil, Water, and Environment Program
(SOL) - Department of Soil, Water, and Environment**

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	SOL	SOL	Soil Pedology	3	321	SOL	SOL	Soil and Water Pollution	3
312	SOL	SOL	Soil Chemistry	3	322	SOL	SOL	Soil-Water-Plant Relationship	2
318	CRP	CRP	General Crop Production	2	323	SOL	SOL	Hydrology	2
313	SOL	SOL	Fundamentals of Irrigation	3	324	SOL	SOL	Analytical Chemistry	2
315	ETA	ETA	Land Surveying and Leveling	3	414	HRT	HRT	Garden Design and Landscaping	3
315	FR	FR	Agricultural Extension and Rural Community	2	325	SOL	SOL	Fertility and Fertilization	3
314	SOL	SOL	Soil Physics	3	326	SOL	SOL	Integrated Water Resources Management	2
					327	SOL	SOL	Summer Training	1
Total				19	Total				18

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	SOL	SOL	Soil Microbiology	3	421	SOL	SOL	Plant Nutrition	3
412	SOL	SOL	Land Reclamation and Improvement	3	422	SOL	SOL	Water Suitability for Irrigation	2
424	AEC	AEC	Natural Resource Economics	2	424	ETA	ETA	Design and Operation of Modern Irrigation Systems	3
413	SOL	SOL	Soil Minerals	3	423	SOL	SOL	Environmental Impact Assessment	3
414	SOL	SOL	Fertilizers and Fertilization	3	424	SOL	SOL	Water Harvesting Techniques	3
415	SOL	SOL	Spate Irrigation	3	425	SOL	SOL	Survey and Classification of Yemeni Soils	2

322	CRP	CRP	Design and Analysis of Agricultural Experiments	3	426	SOL	SOL	Agricultural Lands and Terraces Conservation	3
					427	SOL	SOL	Graduation Projects	1
Total				20	Total				20

Second: Environment and Sustainable Agricultural Development Program - Department of Soil, Water, and Environment

Undergraduate Courses for the Environment and Sustainable Agricultural Development Program - Department of Soil, Water, and Environment

Third Level Courses									
First Semester					First Semester				
Responsible Department	Number of credit hours	Course Title	Course Code	SN	Responsible Department	Number of credit hours	Course Title	Course Code	SN
Animal Resources	3	Marine Ecology and Fish Resources	ENV321	1	Crops Science	3	Natural Pasture Development	ENV311	1
Plant Protection	3	Pesticide Residues Analysis and Environmental Pollution	PLP322	2	Soil	3	Agricultural Land Resources	ENV312	2
Soil	3	Integrated Water Resources Management	SOL326	3	Horticulture + Soil	3	Afforestation and Desertification Control	ENV313	3
Soil	3	Soil and Water Pollution	SOL321	4	Crops Science + Horticulture + Plant Protection	2	Biodiversity	ENV314	4
Agricultural Engineering	3	Renewable Energy Engineering	ETA322	5	Animal Resources + Economics	3	Statistics and Data Analysis	ENV315	5
Plant Protection	2	Plant Ecology	ENV414	6	Soil	3	Remote Sensing Techniques	ENV316	6
Soil	1	Summer Training	ENV325	7	Agricultural Economics	2	Agricultural Extension and Rural Community	FR315	7
18		Total			19		Total		

Fourth Level Courses									
First Semester					First Semester				
Responsible Department	Number of credit hours	Course Title	Course Code	SN	Responsible Department	Number of credit hours	Course Title	Course Code	SN
Engineering	3	Environmental Engineering	ENV421	1	Horticulture + Crops Science	2	Sustainable Agriculture	ENV411	1
Crop Science	3	Agriculture in Arid Environment	ENV422	2	Horticulture + Soil + Protection	3	Organic Farming and Biocontrol	ENV412	2
Soil	3	Environmental	SOL423	3	Soil	2	Waste	ENV413	3

		Impact Assessment					Recycling		
Horticulture	3	Forests and Natural Reserves	HRT411	4	Food Science	2	Food Contamination	ENV324	4
Agricultural Economics	2	Environmental Legislation	ENV424	5	Crop Science + Economics	2	Research Methods	ENV415	5
Protection + Food Science	2	Environmental Health and Safety	ENV425	6	Soil	3	Geographic Information Systems	ENV416	6
Soil	3	Graduation Project	ENV426	7	Agricultural Economics	2	Environmental and Natural Resources Economics	ENV417	7
	19	Total				16	Total		

Department of Agricultural Engineering and Modern Technologies

The Department of Agricultural Engineering and Modern Technologies was established in 1990 as a division within the Department of Soil and Water Resources and Agricultural Mechanization. With the necessary factors in place for the establishment of a fully independent department of agricultural engineering, including the growth in the number of teaching staff in the Department of Soil, Water, and Agricultural Mechanization, the Sana'a University Council made a decision to transform the Agricultural Mechanization Division into an independent department known as the Department of Agricultural Engineering. The university council approved the department's academic plan, which included 17 core courses in addition to the requirement courses for the faculty. As the faculty and departmental programs continued to develop, the department became known as the "Department of Agricultural Engineering and Modern Technologies". The department offers two programs:

- 1- the Agricultural Engineering and Modern Technologies Program
- 2- the Irrigation Systems Engineering and Technology Program

Each program consists of 28 core courses, in addition to the faculty and university requirements. Dozens of academics and engineers with master's degrees in various scientific fields have graduated from the department. There is currently a doctoral program in the department.

The department has a teaching staff of highly qualified and experienced academics who possess exceptional competencies and scientific qualifications from various academic institutions. Our teaching staff members specialize in different fields of agricultural engineering and modern technologies, including power and machinery engineering, irrigation systems engineering, agricultural facilities engineering, food processing engineering, and renewable energy engineering.

In addition to their teaching responsibilities, our esteemed teaching staff also extends their expertise to provide consulting services to both the public and private sectors. This enables the department to offer essential scientific guidance and advice to a wide range of stakeholders. The department currently has 10 faculty members, including 4 professors (one of whom is retired), 3 associate professors, and 3 assistant professors. We also have an assistant teaching staff, three of whom have been granted scholarships to pursue higher studies abroad. Our department also employs 6 technicians, one of whom has been granted a scholarship to pursue higher studies abroad.

The department houses several laboratories and engineering workshops equipped with various tools and equipment that support the implementation of the program's educational, service, and advisory plans. These facilities include:

- Physics and Meteorology Laboratory
- Agricultural Machinery Laboratory
- Agricultural Power Laboratory
- Agricultural Processing Laboratory
- Carpentry Workshop
- Surveying Laboratory

In addition to these laboratories and workshops, the department also possesses a variety of agricultural machinery, tractors, and irrigation networks that support the practical aspects of implementing the program's learning outcomes. These facilities play a crucial role in preparing students with the diverse skills they need to compete in the labor market and secure excellent positions in their specialized field.

Department Vision:

Striving to become a local, regional, and international academic and research reference in the field of agricultural production engineering, based on modern technologies, while seeking solutions to the problems within this field.

Department Mission:

To become a distinguished and leading local and regional institution in terms of scientific and educational competence, as well as scientific research, contributing to serving the community, and providing solutions to agricultural engineering problems.

Department Aims:

1. Preparing highly qualified cadres in agricultural engineering and modern technologies at the undergraduate, master's, and doctoral levels.
2. Contributing to the development of national agricultural production by providing training, extension, and research services while achieving sustainable development, food security, and environmental protection.
3. Organizing workshops, seminars, and scientific conferences related to the challenges and issues of agricultural engineering and modern technologies in Yemen.
4. Contributing to the dissemination of knowledge about agricultural engineering and modern technologies inside and outside the faculty through authoring and translating relevant books, references, and related articles.

Graduate Attributes:

The programs are characterized by preparing competent graduates who are scientifically qualified and equipped with the engineering and technical expertise that enable them to compete in the labor market and solve agricultural problems through planning, design, and achieving sustainable development.

Community services provided by the department include the following:

1- Conducting training courses in the fields of:

- Design and implementation of modern irrigation systems
- Landscape (design and landscaping of gardens)
- Various environmental control systems in agricultural facilities
- Renewable energy systems
- Recycling of animal and agricultural production waste
- Design and implementation of greenhouses

2- Providing engineering consultations in the fields of:

- Agricultural power and machinery engineering
- Irrigation and agricultural drainage engineering
- Renewable energy engineering
- Agricultural buildings, facilities, and environmental control engineering
- Manufacturing and post-harvest technology

Potential Career Opportunities for Graduates of the Department:

Graduates of the Department of Agricultural Engineering and Modern Technologies can:

1. Work as academics in the faculty and pursue postgraduate studies in this field.
2. Work for government and private companies and institutions related to agricultural production engineering.
3. Work in the fields of surveying agricultural land, planning agricultural buildings, constructing dams and water barriers, and designing irrigation networks.
4. Work in the field of installing and maintaining water pumps in general and solar energy pumps in particular.
5. Work on large productive farms in the field of agricultural production engineering.
6. Work for agricultural research institutions.
7. Work for local and international organizations concerned with the agricultural sector.
8. Work for consulting firms specializing in the agricultural sector.

Undergraduate Courses for the Agricultural Engineering and Modern Technologies Program (ETA)

Department of Agricultural Engineering and Modern Technologies

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	ETA	ETA	Thermodynamics and Heat Transfer	3	321	ETA	ETA	Environmental Control Engineering and Technology	3
312	ETA	ETA	Applied Mathematics	3	322	ETA	ETA	Renewable Energy Engineering	3
313	ETA	ETA	Engineering Drawing	3	323	ETA	ETA	Modern Agricultural Techniques	3
314	ETA	ETA	Engineering Mechanics	3	324	ETA	ETA	Farm Power (1)	3
315	ETA	ETA	Land Surveying and Leveling	3	325	ETA	ETA	Agricultural Production Machinery (1)	3
313	SOL	SOL	Fundamentals of Irrigation	3	326	ETA	ETA	Hydraulics	3
315	FR	FR	Agricultural Extension and Rural Community	2	327	ETA	ETA	Summer Training	1
Total				20	Total				19

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	ETA	ETA	Agricultural Production Machinery (2)	3	421	ETA	ETA	Food Processing Engineering	3
412	ETA	ETA	Farm Power (2)	3	422	ETA	ETA	Farm Power and Machinery Management	2
413	ETA	ETA	Design and Planning of Agricultural Facilities	3	423	ETA	ETA	Dams and Wells Engineering	3
318	CRP	CRP	General Crop Production	2	424	SOL	SOL	Water Harvesting Techniques	3
414	ETA	ETA	Farm Workshops	2	424	ETA	ETA	Animal Production Machinery	2
412	SOL	SOL	Land Reclamation and Improvement	3	425	ETA	ETA	Design and Operation of Modern Irrigation Systems	3
415	ETA	ETA	Operation and Maintenance of	3	426	ETA	ETA	Research Project	2

			Agricultural Machinery and Equipment						
Total				19	Total				18

Undergraduate Courses for the Irrigation Systems Engineering and Technology Program (ETI)
Department of Agricultural Engineering and Modern Technologies

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	ETI	ETI	Computer Applications in Irrigation	3	323	ETI	ETI	Engineering Hydrology	3
316	ENV	ENV	Remote Sensing Techniques	3	324	ETI	ETI	Engineering Fundamentals of Irrigation	3
312	ETA	ETA	Applied Mathematics	3	326	SOL	SOL	Integrated Water Resources Management	2
314	ETA	ETA	Engineering Mechanics	3	322	ETA	ETA	Renewable Energy Engineering	3
315	ETA	ETA	Land Surveying and Leveling	3	323	ETA	ETA	Modern Agricultural Techniques	3
313	SOL	SOL	Fundamentals of Irrigation	3	326	ETA	ETA	Hydraulics	3
315	FR	FR	Agricultural Extension and Rural Community	2	327	ETA	ETA	Summer Training	1
Total				20	Total				18

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	ETI	ETI	Hydraulics of Pumps and Open Channels	3	421	ETI	ETI	Engineering Techniques for Hydroponics	3
415	SOL	SOL	Spatte Irrigation	3	422	ETI	ETI	Water Treatment Engineering	3
413	ETI	ETI	Irrigation Systems Engineering (1)	3	423	ETI	ETI	Dams and Wells Engineering	3
414	ETI	ETI	Management, Operation, and Maintenance of Irrigation Systems	3	424	ETI	ETI	Irrigation Systems Engineering (2)	3
415	ETI	ETI	Irrigation Techniques in Greenhouses	3	424	SOL	SOL	Water Harvesting Techniques	3

416	CRP	CRP	General Crop Production	2	425	ETA	ETA	Design and Evaluation of Modern Irrigation Systems	3
417	CRP	CRP	Design and Analysis of Agricultural Experiments	3	426	ETA	ETA	Research Project	2
Total				20	Total				20

Department of Agricultural Economics

The Department of Agricultural Economics and Extension was established in 1990 as one of the founding departments of the Faculty of Agriculture at Sana'a University. The department initially offered two programs: the Agricultural Economics and Cooperation Program and the Agricultural Extension and Development Program. In 2021, in line with the university's plan to develop and introduce new programs in response to labor market needs, the department added a third program: the Agribusiness Management Program.

Academic Sections of the Department:

- Agricultural Economics and Cooperation Division
- Agricultural Extension and Development Division

Current Programs in the Department:

- Agricultural Economics and Cooperation Program
- Agricultural Extension and Development Program
- Agribusiness Management Program

Teaching Staff:

The department currently has a teaching staff consisting of specialized academics with high scientific qualifications from various scientific institutions. They possess diverse expertise in the fields of economics, extension, and development sciences. The faculty members and assistants are distributed as follows:

- ☞ 2 Professors
- ☞ 7 Associate Professors
- ☞ 1 Assistant Professor
- ☞ 6 Instructors (Master's degree)
- ☞ 12 Teaching Assistants (Bachelor's degree)

Infrastructure of the Department:

- Computer Lab
- Agricultural Extension Lab
- 11 Offices for Faculty Members
- 2 Rooms for Teaching Assistants
- A small lecture hall with a capacity of 25 students

Significance of the Department:

The Department of Agricultural Economics and Extension is an applied branch of general economics that focuses on the economic issues related to individual efforts in agriculture. It applies economic theories and principles to agricultural activities and explores ways to optimize the economic utilization of natural, human, and capital resources in agriculture.

The department offers three undergraduate programs: Agricultural Economics and Cooperation, Agricultural Extension and Rural Development, and Agribusiness Management.

Postgraduate Programs Offered by the Department:

The department offers Master's and Ph.D. programs in two specializations:

- 1 Agricultural Economics and Cooperation
- 2 Agricultural Extension and Rural Development

The department also plans to offer a Master's and Ph.D. program in agribusiness management.

Department Vision:

Providing education that adheres to high-quality standards and academic accreditation for its graduates and conducting scientific research and field studies, utilizing the outcomes to address and resolve agricultural economic problems within Yemen and the surrounding region.

Department Mission:

Developing scientific competencies in agricultural economics through outstanding programs that meet the requirements of the labor market, research dissemination, and solving agricultural economic problems.

Department Aims:

- 1) Meeting the needs of society by offering competitive and leading programs in economic and extension sciences.
- 2) Promoting education, learning, and the dissemination of agricultural research by creating a supportive academic environment.
- 3) Preparing locally and regionally pioneering cadres in the field of agricultural economics and extension.
- 4) Networking with the public and private sectors and providing necessary consultations to enhance agricultural economics.
- 5) Supporting and developing students' ideas for conducting research and encouraging them to pursue higher studies.
- 6) Conducting technical, financial, and economic feasibility studies for agricultural projects of various types.
- 7) Conducting economic, marketing, and financing studies according to the department's and other departments' needs.

Graduate Attributes

In addition to the attributes featured in the graduates of the faculty in general, the graduates of this department will be able to:

- Monitor and evaluate agricultural projects and feasibility studies.
- Manage, plan, and evaluate agricultural projects and extension programs.
- Contribute to the implementation of agricultural extension programs and campaigns and the development of women and rural communities.
- Conduct statistical analysis of agricultural and economic data to develop and improve the agricultural sector.
- Continue to learn and pursue studies and research in their field of specialization.

Role of the Department of Agricultural Economics and Extension in Serving the Community:

- The department is concerned with studying the economic aspects of the agricultural sector and the issues related to the production and marketing of plant and animal agricultural products.
- It provides its graduates with a theoretical and practical background that combines agricultural sciences with administrative skills, enabling them to manage agricultural projects, analyze their problems, and provide solutions.
- It provides consultancy and services related to agricultural commodities and contributes to the formulation of economic policies for the community in the agricultural field.
- It serves the community by providing educational, research, and consultancy services that achieve excellence for its graduates in light of local competition and prepare specialized scientific cadres that meet the requirements of the labor market.
- It develops and conserves the environment by providing consultancy and training in specialized fields to institutions operating in its environment to develop their capabilities and those of their employees.
- It encourages research and studies that contribute to serving the environment surrounding the community in general and the rural environment in particular.
- It conducts technical, financial, and economic feasibility studies for agricultural projects of various types.
- It participates in studies on biofuel production.
- It conducts or participates in research and studies that contribute to solving food-related problems in society.
- It conducts courses in statistical and economic analysis.
- It provides scientific consulting to institutions and trains employees to improve their production performance.
- It organizes workshops that address the urgent economic issues of the community.
- It promotes and adopts modern agricultural innovations and technologies.
- It acts as a link between specialized agricultural centers and the rural community to solve the obstacles facing the agricultural community or transfer agricultural problems to scientific research centers for resolution.

Career Opportunities for Graduates of the Department:

1. Marketing and sales in agricultural companies.
2. Management in food companies and factories.
3. Planning and management of agricultural projects in various institutions.
4. Working in international and local organizations such as the Food and Agriculture Organization (FAO).
5. Working in productive and marketing agricultural companies.
6. Research work at the General Authority for Agricultural Research and Extension.
7. Working in consulting offices that prepare research studies and economic feasibility studies.
8. Working in development institutions such as the Social Fund for Development.
9. Working in banks and agricultural associations.

First: Agricultural Economics and Cooperation Program**Undergraduate Courses for the Agricultural Economics and Cooperation Program (AEC) - Department of Agricultural Economics**

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
311	AEC	AEC	Microeconomic Theory	3	321	AEC	AEC	Economic Feasibility Study	3
318	HRT	HRT	Horticultural Crop Production	3	322	AEC	AEC	Agricultural Marketing	2
312	AEC	AEC	Agricultural Finance and Credit	3	323	AEC	AEC	Farm Management	3
313	AEC	AEC	Principles of Agricultural Accounting	3	324	AEC	AEC	Agricultural Cooperation	2
314	AEC	AEC	Research Methodology	2	325	AEC	AEC	Animal Production Economics	3
315	FR	FR	Agricultural Extension and Rural Community	2	326	AEC	AEC	Environmental Economics	2
315	AEC	AEC	Computer Applications	2	327	AEC	AEC	Summer Training	1
Total				18	Total				16

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	AEC	AEC	Agricultural Policy and Planning	2	421	AEC	AEC	Economic and Social Statistics	3
412	AEC	AEC	Agricultural Project Management	3	422	AEC	AEC	Agricultural Project Evaluation	3
415	ERD	ERD	Rural Agricultural Development	2	423	AEC	AEC	Knowledge Economy	2

413	AEC	AEC	International Agricultural Trade	2	424	AEC	AEC	Natural Resource Economics	3
313	PLP	PLP	Economic Insects	3	425	AEC	AEC	Econometrics	3
318	CRP	CRP	General Crop Production	3	426	AEC	AEC	Prices Analysis	3
414	AEC	AEC	Macroeconomics Theory	3	427	AEC	AEC	Graduation Research	1
Total				18	Total				18

Second: Agricultural Extension and Rural Development Program (ERD)

Undergraduate Courses for the Agricultural Extension and Rural Development Program (ERD) - Department of Agricultural Economics

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
315	FR	FR	Agricultural Extension and Rural Community	2	313	AEC	AEC	Principles of Agricultural Accounting	3
311	ERD	ERD	Population and Rural Community	2	321	ERD	ERD	Educational Psychology	2
312	ERD	ERD	Management in Extension Work	2	323	AEC	AEC	Farm Management	3
314	AEC	AEC	Research Methodology	2	421	AEC	AEC	Economic and Social Statistics	3
311	AEC	AEC	Microeconomic Theory	3	324	AEC	AEC	Agricultural Cooperation	2
318	HRT	HRT	Horticultural Crop Production	3	325	AEC	AEC	Animal Production Economics	3
312	AEC	AEC	Agricultural Finance and Credit	3	322	ERD	ERD	Summer Training	1
Total				17	Total				17

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	ERD	ERD	Marketing Extension	2	421	ERD	ERD	Rural Community Development	2
412	ERD	ERD	Principles of Adult Education	2	422	ERD	ERD	Resource Development in Agricultural Sector	3
413	ERD	ERD	Leadership and Rural Development	2	423	ERD	ERD	Planning and Evaluation of Extension Programs	3
414	ERD	ERD	Agricultural Communication and	3	424	ERD	ERD	Dissemination and Adoption of Agricultural	3

		Media						Innovations	
313	PLP	PLP	Economic Insects	3	424	PLP	PLP	Integrated Pest Management	3
318	CRP	CRP	General Crop Production	3	425	ERD	ERD	Contemporary Extension Issues	3
411	AEC	AEC	Agricultural Policies and Planning	3	426	ERD	ERD	Graduation Research	1
Total				18	Total				18

Third: Agribusiness Management Program (AGB)

Undergraduate Courses for the Agribusiness Management Program (AGB) - Department of Agricultural Economics

Third Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
313	AEC	AEC	Principles of Agricultural Accounting	3	321	AEC	AEC	Economic Feasibility Study	3
312	AEC	AEC	Agricultural Finance and Credit	3	321		AGB	Management of Production and Marketing of Food Products	3
311		AGB	Agricultural Production Management	3	322		AGB	Specialized Farm Management	3
318	CRP	CRP	General Crop Production	3	323		AGB	Analysis of Agricultural Projects	3
314	AEC	AEC	Research Methodology	2	424	AEC	AEC	Natural Resource Economics	3
315	FR	FR	Agricultural Extension and Rural Community	2	326	AEC	AEC	Environmental Economics	2
312		AGB	Agricultural Information Systems	2	322		AGB	Summer Training	1
Total				18	Total				18

Fourth Level Courses									
First Semester					Second Semester				
Course Number	Course Code		Course Title	Credit Hours	Course Number	Course Code		Course Title	Credit Hours
	Arabic	Eng.				Arabic	Eng.		
411	AEC	AEC	Agricultural Policy and Planning	2	421		AGB	Agribusiness Administration (2)	3

412	AEC	AEC	Agricultural Project Management	3	422		AGB	Agricultural Exchanges	3
412		AGB	Agribusiness Administration (1)	3	424	PLP	PLP	Integrated Pest Management	2
413	AEC	AEC	International Agricultural Trade	2	423		AGB	Contemporary Agricultural Issues	3
413		AGB	Agriculture and Food Security	2	425	AEC	AEC	Econometrics	3
414		AGB	Agribusiness Risk Management	3	424		AGB	Agricultural Data Analysis	3
414	AEC	AEC	Macroeconomics Theory	3	425		AGB	Graduation Research	1
Total				18	Total				18