Sana'a University
Faculty of Agriculture, Foods, and Environment
Department of Agricultural Engineering and Modern Technologies

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:

Preparing highly qualified cadres in agricultural engineering and modern technologies at the undergraduate, master's, and doctoral levels.
Contributing to the development of national agricultural production by providing training, extension, and research services while achieving sustainable development, food security, and environmental protection.
Organizing workshops, seminars, and scientific conferences related to the challenges and issues of agricultural engineering and modern technologies in Yemen.
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.

Brief about the department

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:

the Agricultural Engineering and Modern Technologies Program
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.

<u>These facilities include:</u>

• 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.

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Fourth Level Courses	
First Semester	Second Semester
Hydraulics of Pumps and Open Channels	Engineering Techniques of Hydroponics
Spate (Sail) irrigation	Water Treatment Engineering
Irrigation Systems Engineering (1)	Dams and Wells Engineering
Management, Operation, and Maintenance of Irrigation Systems	irrigation Systems Engineering (2)
Irrigation Techniques in Greenhouses	Water Harvesting Techniques
General Crops Production	Design and Evaluation of Modern Irrigation Systems
Design and Analysis of Agricultural Experiments	Research Project

Study Plan of the Agricultural Engineering and Modern Technology Program (ETA)

Third Level Courses	
First Semester	Second Semester
Thermodynamics and Heat Transfer	Environmental Control and Engineering
Applied Mathematics	Renewable Energy Engineering
Engineering Drawing	Modern Agricultural Technology
Engineering Mechanics	Farm Power (1)
Surveying and Land Leveling	Farm Production Machines (1)
Principles of Irrigation	Hydraulics
Agricultural Extension and Rural Community	Summer Training

Fourth Level Courses	
First Semester	Second Semester
Farm Production Machines (2)	Food Processing Engineering
Farm Power (2)	Farm Power and Machinery Management
Design and planning of Agricultural Facilities	Dams and Wells Engineering
General Crops Production	Water Harvesting Technology
Farm Workshops	Machinery of Animal Production
Land Reclamation and Improvement	Design and Operation of Modern Irrigation Systems
Operation and Maintenance of agricultural Machinery and Equipment	Research Project

Community services

Community services provided by the department include the following:

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
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

Study Plan of the Irrigation Systems Engineering and Technology Program (ETI) –

Third Level Courses	
First Semester	Second Semester
Computer Application in Irrigation	Engineering Hydrology
Remote Sensing Techniques	Engineering Principles of Irrigation
Applied Mathematics	Integrated Management of Water resources
Engineering Mechanics	Renewable Energy Engineering
Surveying and Land Leveling	Modern Agricultural Technology
Principles of Irrigation	Hydraulics
Agricultural Extension and Rural Community	Summer Training

Career Opportunities

Potential Career Opportunities for Graduates of the Department:

Graduates of the Department of Agricultural Engineering and Modern Technologies can:
Work as academics in the faculty and pursue postgraduate studies in this field.
Work for government and private companies and institutions related to agricultural production engineering.
Work in the fields of surveying agricultural land, planning agricultural buildings, constructing dams and water barriers, and designing irrigation networks.
Work in the field of installing and maintaining water pumps in general and solar energy pumps in particular.
Work on large productive farms in the field of agricultural production engineering.
Work for agricultural research institutions.
Work for local and international organizations concerned with the agricultural sector.
Work for consulting firms specializing in the agricultural sector.

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.

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