

Programme Catalogue

College Name	College Abbreviation
Agricultural Engineering Sciences	AES
Department Name (in English)	Department Abbreviation
Food Science and Technology	FSST
Department Name (in Kurdish)	
پشكا زانست وتهكنولوجيا خوارنى	
Department Name (in Arabic)	
قسم علوم وتكنولوجيا الاغذية	
1. Qualification awarded	
Bachelor of Science in Food Science and Technology	
2. Length of programme	
4 Years	
3. Number of credits	
240 ECTS credits	
4. Level of qualification according to the National Qualification Framework and the European Qualifications Framework	
First cycle, Bachelor's degree Qualifications that signify completion of the first cycle are awarded to students who: • have demonstrated knowledge and understanding in a field of study that builds upon their general secondary education, and is typically at a level that, whilst supported by advanced textbooks, includes some aspects that will be informed by knowledge of the forefront of their field of study • Can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competencies typically demonstrated through devising and sustaining arguments and solving problems within their field of study; • Have the ability to gather and interpret relevant data (usually within their field of study) to inform judgments that include reflection on relevant social, scientific or ethical issues; • Can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences; • Have developed those learning skills that are necessary for them to continue to undertake further study with a high degree of autonomy	
5. Field(s) of study (e.g. ISCED-F)	
Agricultural Engineering Sciences	
6. Specific admission requirements (if applicable)	
High school degree	
7. Specific arrangements for recognition of prior learning (formal, non-formal and informal) (if applicable)	
The programme may recognize formal credits earned in a formal context if these credits are relevant to the programme and confirmed by the Transcript of Records.	
8. Qualification requirements and regulations, including graduation requirements	
Students should successfully complete all the core courses and collect 240 ECTS credits	
9. Profile of the programme	

- Effective contribution in realizing in human and economic development of the Community by preparing qualified cadres equipped with knowledge, skills and able to deal with modern technology to compete in the labor market, and to provide research and engineering consultancy for community service in way that developing the food industries in country and drive the wheel of the national economy
- Food science is a scientific, academic, and professional field that interprets and applies principles of engineering, science, and mathematics to food manufacturing and operations, including the processing, production, handling, storage, conservation, control, packaging, and distribution of food products. Given its reliance on food science and broader engineering disciplines such as mechanical, civil, chemical, industrial and agricultural engineering.
- Qualifying specialists in the field of food sciences with knowledge and skills appropriate to the labor market.
- Due to the complex nature of food materials, food science also combines the study of more specific chemical and physical concepts such as biochemistry, microbiology, food chemistry, thermodynamics, transport phenomena, rheology, and heat transfer. Food science and biotechnology apply this knowledge to the cost-effective design, production, and commercialization of sustainable, safe, nutritious, healthy, appealing, affordable and high-quality ingredients and foods, as well as to the development of food systems, machinery, and instrumentation
- Food scientists study new ingredients with better nutrition and health benefits, and develop new products or technologies to improve the shelf life of the product. A food technologist is not only involved in the food processing, but also in designing of the food plant and various equipment used in processing

10. Programme Educational Objectives

- The Program Educational Objectives (POEs) of the Food Science and Technology department (FSST) are to prepare graduates with:
 1. Rehabilitation and training students scientifically and practically in the field of food science, technology, design, and operation of food manufacturing, and graduate engineers' technicians to deal with modern technology and development
 2. Be able to analyze, design, and provide technical and managerial solutions for food technology systems, and develop new food products in government and private factories
 3. Long-life study, be successful in food engineering technology positions and related engineering technology areas as demonstrated by promotions, increased marketing, and food economic outcomes.
 4. The department offers undergraduate and postgraduate degree programs in Food Science, Food Technology, Quality Control and Food Safety and Nutrition.
 5. The department aims to develop the capabilities of students, whether in preliminary or postgraduate studies, to be able to meet the community's need for different nutritional specialties, whether in the field of food manufacturing and preservation, human nutrition, or food health.
 6. The department is a pioneer and distinguished in education, scientific research, and community service in the field of food industries and quality control in the governmental and private sectors, by providing advice and scientific advice to various food factories and holding scientific seminars and training courses

7. Developing knowledge in the field of food sciences through conducting applied research, as well as authoring and translating books in the field of food sciences. and human nutrition, and work to apply it to serve the community.
8. Educating the community about food health and the role of human nutrition in supporting health and preventing disease

11. Programme learning outcomes

After completing this programme, students should have:

1. To know the food systems, the composition of different foods and milk products, and to understand the principles and practices of food and dairy processing that concern food and dairy product quality.
2. To be familiar with traditional and modern food preservation methods, postharvest handling methods, and the uses of food packaging materials to extend the shelf-life of food products.
3. Apply obtained skill in food and dairy microbiology to operate a chemical lab related to microbial safety and quality of food, meat, dairy, juice and beverages, confectionery, cereal and bakery products, and other food products
4. Analyze market trends, develop marketing skills, and understand the food economy with the potential to start their own business and generate income.
5. Understanding the role of food chemistry in human nutrition and supporting health, and the ability to create a daily dietary program for the community and individuals.
6. Derive, analyze, and solve hands-on laboratory experiences, analyze chemical and physical tests, understand the nature and sensory properties of food, apply technology to create meat, dairy products, functional food, bakery, sweets, oil, fruit, and vegetables, and being able to develop new food products.
7. Operate and maintain food plant machinery, control food quality to manage the unit operations, set up factories, and understand waste utilization, industry, and waste management during food processing.
8. Communicate effectively with stakeholders and farmers to promote innovative techniques of production, extension, and training, the ability to work in teams, and present research findings to diverse audiences

12. Programme structure diagram with credits

College of Agricultural Engineering Sciences				AES	Version No.: 2		
Department of Food Sciences and Technology				FSST	Version Date: 10/30/2025		
Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Semester 8
Principles of Food Sciences 6 ECTS FSST B110H	Principles of Dairy Science 6 ECTS FSST B120H	Dairy Technology 7 ECTS FSST B230H	Food Preservation 7 ECTS FSST B240H	Food biotechnology 7 ECTS FSST B350H	Cheese and fermented dairy products processing 6 ECTS FSST B360H	Human nutrition 5 ECTS FSST B474C	Food plant engineering 6 ECTS FSST B480H
Computer Skills 4 ECTS BASC B110H	Principles of Animal production 6 ECTS ANIP B121H	Biochemistry 5 ECTS BASC B118H	Dairy Microbiology 7 ECTS FSST B241H	Food analysis 6 ECTS FSST B351H	Food Quality Control 6 ECTS FSST B361H	Cereal and Bakery product technology 7 ECTS FSST B471H	Internship 6 ECTS FSST B480H
Academic debate 4 ECTS BASC B112C	Mathematics 4 ECTS BASC B125C	General Microbiology 6 ECTS BASC B121H	Postharvest handling of Fruit and vegetable 7 ECTS FSST B242H	Meat science 5 ECTS FSST B352H	Food packaging 6 ECTS FSST B362H	Sugar and confectionary 7 ECTS FSST B472H	Project 12 ECTS FSST B480H
English Language I 4 ECTS BASC B111C	English Language II 4 ECTS BASC B113C	Agricultural Economics 5 ECTS AERD B232C	Food industry management 4 ECTS FSST B243H	Experimental design and analysis 5 ECTS FLDC B351H	Meat technology 6 ECTS FSST B363H	Fat and oil technology 7 ECTS FSST B473H	Elective 6 ECTS
Organic chemistry 6 ECTS BASC B123H	Analytical Chemistry 6 ECTS BASC B116H	Food Marketing 7 ECTS AERD B233H	Biostatistics 5 ECTS FSST B244H	Elective 7 ECTS	Elective 6 ECTS	Elective 4 ECTS	Elective ECTS
Engineering drawing 6 ECTS BASC B115L	Kurdology 4 ECTS BASC B114C						
Fall Electives	Fermented food and beverages 7 ECTS FSST B353H	Food and dairy chemistry 7 ECTS FSST B354H	Food waste management 4 ECTS FSST B470C	Functional Food 4 ECTS FSST B475C			
Spring Electives	Food Microbiology 6 ECTS FSST B364H	Food Safety and Hygiene 6 ECTS FSST B365H	New food product development 6 ECTS FSST B483H	Poultry and fish products technology 6 ECTS FSST B484H			

Where:

FST: Food Science and Technology

B: Bachelor

F: Field work

P: Project

L: Lab

H: Hybrid

C: Classroom (Theory)

13. Mode of Study

Full time

14. Examination regulations and grading scale

The following grading scale is used:

% Points	Grade
90 – 100	Excellent
80 - < 90	Very Good
70 - < 80	Good
60 - < 70	Medium
50 - < 60	Pass
0 - < 50	Fail

15. Mobility window (if applicable)

16. Work placement(s)/internships (if applicable)

Students are required to complete a structured internship at an approved relevant approved agency. A total of six (6) ESTC credits must be earned, following a rigorous evaluation process

The programme includes a 6 ECTS internship opportunity in semester 8

17. Work-based learning (if applicable)																																																											
- Fields of work for graduates of this department - The graduate of this department can work as a human nutrition consultant, food chemist, food analyst, food production manager, food quality control manager, quality assurance officer, food industry researcher, and as an employee in the Ministry of Health and Education, etc																																																											
18. Programme director or equivalent																																																											
First Middle Last: Dr. Khabat Noori Hussein khabat.hussein@uod.ac Mob: +964 7504873781																																																											
19. Occupational profiles of graduates																																																											
Give a brief description of the types of jobs for which the programme prepares students and/or that graduates generally fulfil.																																																											
20. Access to further studies																																																											
Graduates can apply for admission to higher diploma and 2 nd cycle (Master's) studies in related disciplines.																																																											
21. Academic Staff																																																											
<table border="1"> <thead> <tr> <th>Full Name</th> <th>Qualification</th> <th>Academic title</th> <th>Phone</th> <th>Email</th> </tr> </thead> <tbody> <tr> <td>Khabat Noori Hussein</td> <td>PhD -Head of the Dept.</td> <td>Ass. Professor</td> <td>07504873781</td> <td>Khabat.hussein@uod.ac</td> </tr> <tr> <td>Issa Mousa Mohammed</td> <td>PhD</td> <td>Ass. Professor</td> <td>07504105829</td> <td>issa.mousa@uod.ac</td> </tr> <tr> <td>Jamal Sadeek Khurshid</td> <td>PhD</td> <td>Ass. Professor</td> <td>07504576278</td> <td>jamal-sadeek@uod.ac</td> </tr> <tr> <td>Siamand Nizar Hassan</td> <td>PhD</td> <td>lecturer</td> <td>07503151155</td> <td>shassan@uod.ac</td> </tr> <tr> <td>Nareen Abdulaziz Shekhu</td> <td>PhD student</td> <td>lecturer</td> <td>07504500446</td> <td>nareen.shekhu@uod.ac</td> </tr> <tr> <td>Abdulrahman Abdulhamid Yousif</td> <td>MSc -Vice Head of the Dept.</td> <td>Demonstrator</td> <td>07504248032</td> <td>abdulrahman.yousif@uod.ac</td> </tr> <tr> <td>Jihad Saleem Mohamed</td> <td>MSc</td> <td>Demonstrator – Contract</td> <td>07504641122</td> <td>jihad.saleem@uod.ac</td> </tr> <tr> <td>Mavin Mohamed</td> <td>BSc</td> <td>Demonstrator – Contract</td> <td>07507035889</td> <td>NA</td> </tr> <tr> <td>Wafa Zaki</td> <td>BSc</td> <td>Demonstrator – Contract</td> <td>07507481432</td> <td>NA</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Full Name	Qualification	Academic title	Phone	Email	Khabat Noori Hussein	PhD -Head of the Dept.	Ass. Professor	07504873781	Khabat.hussein@uod.ac	Issa Mousa Mohammed	PhD	Ass. Professor	07504105829	issa.mousa@uod.ac	Jamal Sadeek Khurshid	PhD	Ass. Professor	07504576278	jamal-sadeek@uod.ac	Siamand Nizar Hassan	PhD	lecturer	07503151155	shassan@uod.ac	Nareen Abdulaziz Shekhu	PhD student	lecturer	07504500446	nareen.shekhu@uod.ac	Abdulrahman Abdulhamid Yousif	MSc -Vice Head of the Dept.	Demonstrator	07504248032	abdulrahman.yousif@uod.ac	Jihad Saleem Mohamed	MSc	Demonstrator – Contract	07504641122	jihad.saleem@uod.ac	Mavin Mohamed	BSc	Demonstrator – Contract	07507035889	NA	Wafa Zaki	BSc	Demonstrator – Contract	07507481432	NA					
Full Name	Qualification	Academic title	Phone	Email																																																							
Khabat Noori Hussein	PhD -Head of the Dept.	Ass. Professor	07504873781	Khabat.hussein@uod.ac																																																							
Issa Mousa Mohammed	PhD	Ass. Professor	07504105829	issa.mousa@uod.ac																																																							
Jamal Sadeek Khurshid	PhD	Ass. Professor	07504576278	jamal-sadeek@uod.ac																																																							
Siamand Nizar Hassan	PhD	lecturer	07503151155	shassan@uod.ac																																																							
Nareen Abdulaziz Shekhu	PhD student	lecturer	07504500446	nareen.shekhu@uod.ac																																																							
Abdulrahman Abdulhamid Yousif	MSc -Vice Head of the Dept.	Demonstrator	07504248032	abdulrahman.yousif@uod.ac																																																							
Jihad Saleem Mohamed	MSc	Demonstrator – Contract	07504641122	jihad.saleem@uod.ac																																																							
Mavin Mohamed	BSc	Demonstrator – Contract	07507035889	NA																																																							
Wafa Zaki	BSc	Demonstrator – Contract	07507481432	NA																																																							
Retired academic staff																																																											
<table border="1"> <thead> <tr> <th>Full Name</th> <th>Qualification</th> <th>Academic title</th> <th>Phone</th> <th>Email</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>					Full Name	Qualification	Academic title	Phone	Email																																																		
Full Name	Qualification	Academic title	Phone	Email																																																							

Ibrahim Aswad Baker	PhD	Professor	7504570729	Ibrahim.aswad@uod.ac
Maeda Mohammed Tayib	PhD	Ass. Professor	7504088815	maeda.tayeb@uod.ac
Chinar Mohamed Omar	BSc	Demonstrator	07507391986	NA

22. Facilities and Resources (Lecture halls, Labs, etc.)

The department uses these facilities:

Type	Quantity	Capacity (students)	Type of use	Equipment included
Lecture Hall stage 1	1	60	Dedicated	Projector, whiteboard
Lecture Hall stage 2	1	60	Dedicated	Projector, whiteboard
Lecture Hall stage 3	1	60	Dedicated	Projector, whiteboard
Lecture Hall stage 4				
Food Processing Lab 1	1	20	Dedicated	Lab materials + Projector, whiteboard
Dairy Processing Lab 2	1	20	Dedicated	Lab materials + Projector, whiteboard
Food and Dairy Microbiology Lab 3	1	20	Dedicated	Lab materials + Projector, whiteboard
Food Innovation Lab 4				

23. Accreditation and recognition

The programme is officially recognized by the Ministry of Higher Education and Scientific Research of the Kurdistan Region – Iraq, as well as by the Ministry of Higher Education and Scientific Research of Iraq.