Academic Program Description Form

University Name: **University of Mosul**
Faculty/Institute: **College of Agriculture and Forestry**
Scientific Department: **Department of Food Science**
Academic or Professional Program Name: **B.Sc.**
Final Certificate Name: **Food Science B.Sc.**
Academic System: **Semesters**
Description Preparation Date: **20/4/2025**
File Completion Date: **20/4/2025**

أ.د. علي فاروق المعاضيدي
معاون العميد للشؤون العلمية

Signature:
Head of Department Name: **Prof. Asst. Dr. Taha M. Taki**
Date: 20/4/2025

Signature:
Scientific Associate Name: Prof. Asst.
Date: 20/4/2025

The file is checked by:
Director of the Quality Assurance and University Performance Department: **Assistant Lecturer: Oday Abdulhadi Adday**
Quality Assurance Unit Head: **Asst. Dr. Ramia Amer Khalil**
Date:
Signature:

جامعة الموصل
كلية الزراعة والغابات
فحصان الجبر

Approval of the Dean
Prof. Dr. Ali Farouq Al-Ma'athedi
عميد كلية الزراعة والغابات

جامعة الموصل
كلية الزراعة والغابات
قسم علوم الاغذية

1. Program Vision

To achieve leadership in applied education and scientific research in the field of food science, excelling in the preparation of highly competent graduates, and actively contributing to food security, sustainability, and community service at both local and regional levels.

2. Program Mission

The Department of Food Science is committed to preparing graduates who are distinguished both academically and practically, equipped with modern applied and professional skills, and dedicated to professional ethics and sustainability. This is achieved through a stimulating educational and research environment that meets labor market needs and contributes to community service.

3. Program Objectives

1- Enable graduates to master fundamental and advanced concepts in food science and apply them practically in food manufacturing and analysis sectors, allowing them to perform professionally within the first three years after graduation.

2- Develop students' abilities to design and implement research projects and to innovate food products using modern technologies, with the aim of increasing their participation in scientific conferences and events by 30% during their study period.

3- Strengthen students' commitment to professional values and ethics by integrating topics of professional conduct and safety across all applied courses, with a target compliance rate of no less than 90% in practical behavioral assessments.

4- Prepare graduates with effective communication, teamwork, and problem-solving skills through group projects, scientific presentations, and field reports, evaluated at least twice throughout the program.

5- Encourage students to engage in lifelong learning and professional self-development by participating in accredited training programs or online learning platforms, with a minimum participation rate of 60% before graduation.

4. Program Accreditation

No

5. Other external influences

1- Family problems facing students negatively affect students 'performance in the academic program>
2- Extra-curricular activities help students achieve greater in the implementation of the academic program .
3- The economic situation of students and their association with money-saving work negatively affects their academic performance.
4- The learning efficiency of the student from his preparatory studies is one of the most important indicators of excellence in the performance of the academic program

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	11	20	11.52737752	
College Requirements	11	34	19.59654179	
Department Requirements	35	118	68.87608069	
Summer Training	1			
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

Year/Level	Course Code	Course Name	Hours		Credit	Course Type
			theoretical	practical		
2024–2025 First Class First semester (Fall)	CHEM106	Chemistry	2	3	3.5	Department Requirement
	PRHS116	Principles of Horticultural Science	2	3	3.5	College Requirement
	PAEC115	Principles of Agricultural Economy	2	-	2	College Requirement
	MATH104	Mathmatics	2	-	2	College Requirement
	DEHR100	Democracy and Human Rights	2	-	2	University Requirement
	ENGL101	English Language 1	**2**	-	2	University Requirement
	ARAL102	Arabic Language 1	**2**	-	2	University Requirement
	ENGD118	Engineering Drawing	–	**3**	**1.5**	Department Requirement
2024–2025 First Class Second semester (Sipring)	ANCH107	Analytical Chemistry	2	3	3.5	Department Requirement
	PRAP114	Principles of Animal Production	2	3	3.5	College Requirement
	PRFI111	Principles of Food Industry	2	3	3.5	College Requirement
	PREW133	Principles of Engineering workshops	2	3	3.5	Department Requirement
	STAT109	Statistical	2	3	3.5	College Requirement
	COMA103	Computer Application 1	2	-	2	University Requirement
	PRSS113	Principles of Soil Science	2	3	3.5	College Requirement
2024–2025 Second Class First semester (Fall)	ORCH105	Organic Chemistry	2	3	3.5	College Requirement
	PRMB205	Principles of Microbiology	2	3	3.5	College Requirement
	INCR230	Industrial Crops	2	3	3.5	Department Requirement
	PRPD227	Principles of Dairy	2	3	3.5	Department Requirement

	DAAE302	Design and analysis of agricultural experiments	2	3	3.5	Department Requirement
	COMA203	Computer Application 2	2	-	2	University Requirement
	PAEX206	Principles of agricultural extension	2	-	2	College Requirement
	CBAP200	Crimes of the defunct Baath Party	2	-	2	University Requirement
2024-2025 Second Class Second semester (Sipring)	PHCH108	Physics Chemistry	2	3	3.5	Department Requirement
	BICH204	Biochemistry	2	3	3.5	College Requirement
	STPP419	Stored Products Pests	2	3	3.5	Department Requirement
	FOSA238	Foods sanitation	2	3	3.5	Department Requirement
	FOFM239	Food Factories Management	2	-	2	Department Requirement
	FOFE240	Food Factories Engineering	2	3	3.5	Department Requirement
	ENGL201	Arabic Language 2	2	-	2	University Requirement
	ARAL202	English Language 2	2	-	2	University Requirement
2024-2025 Therd Class First semester (Fall)	FOCH364	Food Chemistry	2	3	3.5	Department Requirement
	CETE365	Cereal Technology	2	3	3.5	Department Requirement
	MOBI435	Molecular Biology	2	3	3.5	Department Requirement
	FOMI366	Food Microbiology	2	3	3.5	Department Requirement
	PRHN367	Principles of Human Nutrition	2	-	2	Department Requirement
	TEDS368	Technology of dates and sugar	2	3	3.5	Department Requirement
	AGMA442	Agricultural Marketing	2	-	2	Department Requirement
2024-2025 Therd Class Second	DACH369	Dairy Chemistry	2	3	3.5	Department Requirement
	BRPA370	Bread and pastries	2	3	3.5	Department Requirement
	GEEN371	Genetics Engineering	2	3	3.5	Department Requirement

semester (Sipring)	DAMI372	Dairy Microbiology	2	3	3.5	Department Requirement
	MEPA373	Metabolic Pathways	2	3	3.5	Department Requirement
	LIDP374	Liquid Dairy Products	2	3	3.5	Department Requirement
2024–2025 Fourth Class First semester (Fall)	FOTE465	Food technology 1	2	3	3.5	Department Requirement
	CHPR466	Cheese Processing	2	3	3.5	Department Requirement
	BITE467	Biotechnology 1	2	3	3.5	Department Requirement
	FOAN468	Food Analysis	2	3	3.5	Department Requirement
	MEFT469	Meat and fish Technology	2	3	3.5	Department Requirement
	HSHC405	Handling and storage of Horticultural Crops	2	3	3.5	Department Requirement
	REPR402	Research Project 1	–	**3**	**1.5**	University Requirement
2024–2025 Fourth Class Second semester (Sipring)	FOPR470	Food Processing 2	2	3	3.5	Department Requirement
	BUIC471	Butter and Ice cream	2	3	3.5	Department Requirement
	BIOTE472	Biotechnology 2	2	3	3.5	Department Requirement
	QUCO473	Quality Control	2	3	3.5	Department Requirement
	THNU474	Therapeutic nutrition	2	3	3.5	Department Requirement
	SEMN404	Seminar	**1**	–	**1**	University Requirement
	REPR403	Research Project 2	–	**3**	**1.5**	University Requirement

8. Expected learning outcomes of the program

Educational Competency	Code	Learning Outcome	Linked Objectives
Knowledge and Understanding	A1	Explains fundamental and advanced concepts in food science, including food safety, nutrition, and related regulations.	1, 2, 3
	A2	Identifies complex problems in food technology and understands approaches to address them based on acquired knowledge.	1, 2
	A3	Understands the basics of food project design and management, and proposes practical ideas that support sustainability.	2, 3
Cognitive Skills	B1	Selects appropriate design methods and modern techniques to solve production-related challenges under specific conditions.	2, 4
	B2	Applies scientific knowledge to determine appropriate preservation methods and packaging materials for food products.	1, 2
Practical Skills	C1	Utilizes modern tools and techniques in food analysis, conducts lab experiments, interprets results, and ensures quality and safety.	1, 2, 5
	C2	Manages food manufacturing or operational processes in real settings while ensuring compliance with quality standards.	1, 2
Communication & Teamwork	D1	Communicates effectively in oral and written formats, works within multidisciplinary teams, and presents results professionally.	4
	D2	Keeps up with developments in food and nutrition sciences and translates them into career-relevant skills aligned with the job market.	4, 5
Ethics and Values	E1	Assumes individual and team responsibility in task execution and commits to	3, 4

		professional ethics and sustainability practices.	
	E2	Continuously develops self-awareness and recognizes the importance of lifelong learning in food and regulatory disciplines.	3, 5

9. Teaching and Learning Strategies

Code	Learning Outcome	Proposed Modern Teaching Strategies	Proposed Assessment Methods
A1	Identifies fundamental and advanced concepts in food science and applies theoretical knowledge to solve problems related to food safety, public health, and relevant regulations.	Interactive lectures, problem-based learning (PBL), flipped classroom, concept mapping	Written exams, concept maps, pre/post-tests
A2	Recognizes complex problems in food technology and understands approaches to address them using acquired knowledge.	Problem analysis, case studies, class discussions, project-based learning	Case study analysis, critical analysis reports, guided discussions
A3	Understands the basics of food project design and management and proposes practical ideas that support food sustainability.	Applied workshops, simulations, innovation groups, project-based learning	Design projects, group project evaluations, applied research papers
B1	Selects modern design methods and techniques to address challenges in food production under specific conditions.	Case studies, simulations, design thinking, brainstorming	Design analysis reports, case evaluations, applied tests
B2	Applies scientific knowledge to identify appropriate preservation methods and suitable packaging materials for food products.	Applied activities, product showcases, model design, comparative studies	Practical evaluation, presentations, product reports
C1	Employs modern tools and techniques for food analysis, conducts laboratory experiments, interprets results, and ensures quality and safety.	Laboratory work, experimental learning, performance-based learning, practical training	Lab reports, performance observations, practical tests
C2	Manages food production or operational processes in real settings and ensures compliance with quality standards.	Work-based learning, applied projects, field supervision, realistic simulation	Internship report, field supervisor evaluation, daily journal
D1	Communicates effectively in both oral and written formats, works	Collaborative learning, role-playing,	Group project evaluation, peer

Code	Learning Outcome	Proposed Modern Teaching Strategies	Proposed Assessment Methods
	within multidisciplinary teams, and presents work outcomes professionally.	group discussions, presentations	assessment, presentation feedback
D2	Keeps up with trends and developments in food and nutrition sciences and translates them into job-relevant professional skills.	Market trend analysis, professional simulation workshops, self-directed learning	Portfolio, self-evaluation survey, market-linked project presentations
E1	Assumes individual and group responsibility in task execution and commits to professional ethics and sustainable practices.	Reflective learning, situation analysis, ethical guidance, field-based learning	Ethical evaluation, decision-making simulations, observed assessment
E2	Continuously develops personal and professional skills, and recognizes the importance of lifelong learning in food science and related regulations.	Professional development workshops, community-based learning, discipline-related volunteer work	Initiative analysis, community service projects, self and peer evaluations

10. Evaluation methods
Quizzes ,Quarterly Exams ,Report Evaluation Discussion Evaluation ,Research Report Evaluation

11. Faculty			
Faculty Members			
Academic Rank	**Specialization**	**Special Requirements/Skills (if applicable)**	**Number of the teaching staff**

	General	Special			Staff	Lecturer
Professor	–	1			1	–
Assistant Professor	–	6			6	–
Lecturer	–	11			11	–
Assistant Lecturer	–	10			10	–

Professional Development

Mentoring new faculty members

1- Developing the skills of enhancing self-confidence ,a positive orientation towards a culture of quality and requirements ,enhancing a sense of responsibility ,believing in the spirit of teamwork and its role in achievement ,and developing a sense of employment and moral scruples .
2- Evaluate courses and plans in coordination with the scientific departments to ensure that they meet the requirements of the labor market .
3- Possess student counseling skills .
4- The ability to produce educational materials according to quality specifications ,including courses ,media ,lectures and educational supplies

Professional development of faculty members

1- Developing educational skills through diversifying teaching methods ,positively dealing with and practicing feedback ,using educational technologies ,and focusing on developing intellectual and competitive skills among students
2- .Developing the skills of dealing with problems and phenomena affecting the progress of the educational process in the college
3- Develop the ability to evaluate courses and plans in coordination with scientific departments to ensure that they meet the requirements of the labor market .
4- Developing the ability to measure the satisfaction of beneficiaries) faculty members , students ,community (with the educational and research process in the college
5- Evaluating tests and methods of evaluating students ,and preparing reports to follow up on their results

12. Acceptance Criterion

1- Students are admitted to the college's programs centrally through the Central Admission Department at the Ministry of Higher Education and Scientific Research and according to the application channels approved by the Ministry .
2- Students are distributed to the department's program according to the average and the desire of the students .
3- To be physically and healthily fit based on the medical examination report
4- Advanced student average according to the minimum averages approved by the Ministry

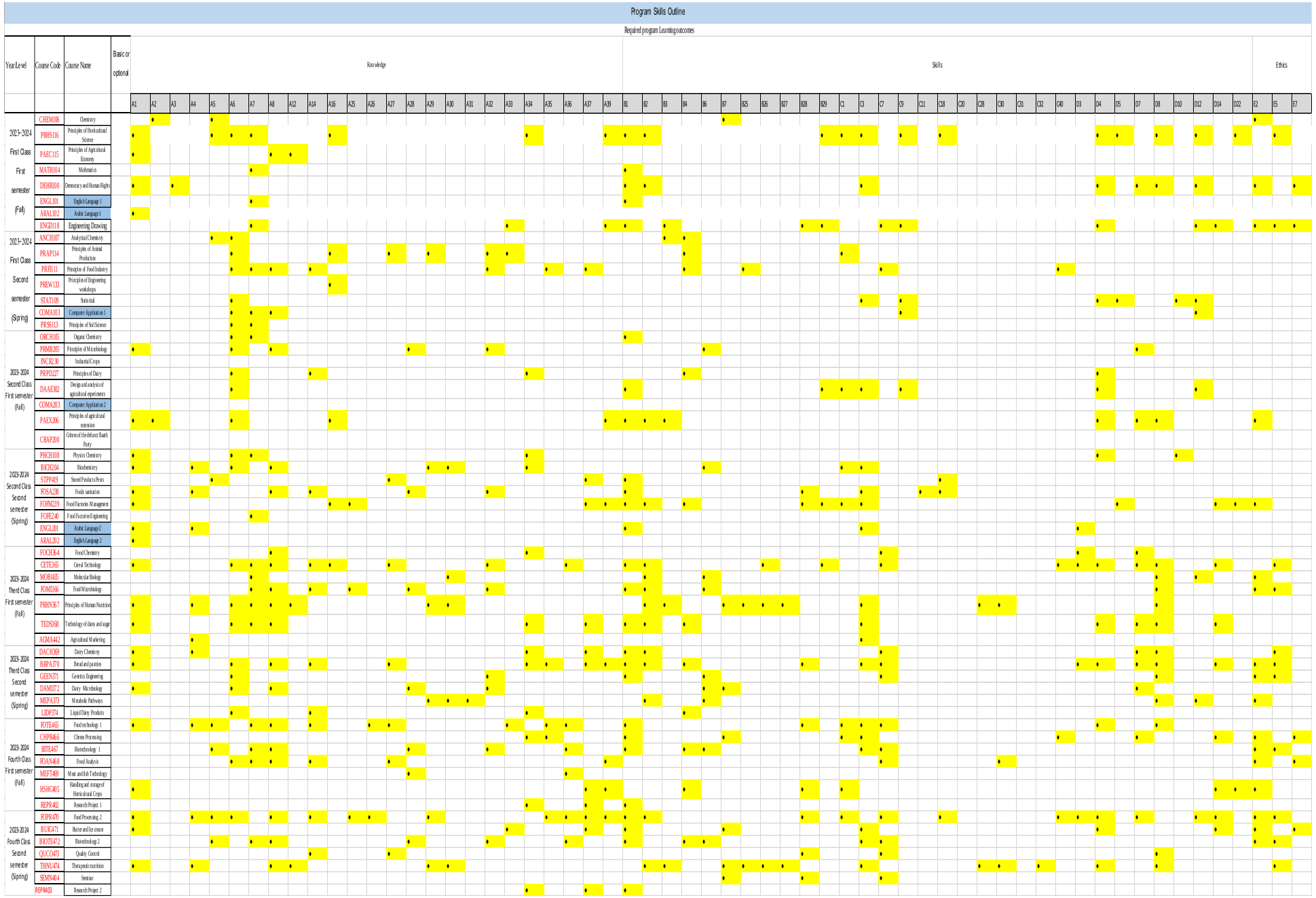
13. The most important sources of information about the program

1- The main source of information for the program is the minutes of the committee of experts of the departments corresponding to the Department of Food Science and approved as a scientific body by the Committee of Deans of Faculties of Agriculture .
2- The study prepared by the Scientific Committee and the Department Council and approved by the College Council ,which includes proposals to modernize agricultural disciplines and simulate the three most important corresponding scientific departments accredited globally .
3- Local and regional market needs

14. Program Development Plan

A plan was developed to develop the program after studying the internal audit observations by the teachers ,the quality assurance committees ,the scientific committee in the department ,the department council ,the external review of the program ,and the students ' observations by analyzing the results of student questionnaires for courses ,the observations of academic advisors ,analyzing the data of the questionnaires of the questionnaires committee in the college ,and the evaluation reports of the exam questions for all courses of the program ,which are as follows:

1- Insufficient practical training
2- The lack of a clear mechanism to help struggling students and motivate outstanding student
3- Students 'lack of knowledge of the university regulations governing the educational process
4- Incompatibility of the success rates of some courses with the normal distribution scheme


Program Skills Outline
Required program Learning outcomes
Year Level
Course Code
Course Name
Basic or optional
Knowledge
Skills
Ethics
A1 A2 A3 A4 A5 A6 A7 A8 A12 A14 A16 A25 A26 A27 A28 A29 A30 A31 A32 A33 A34 A35 A36 A37 A39
B1 B2 B3 B4 B6 B7 B25 B26 B27 B28 B29
C1 C3 C7 C9 C11 C18 C20 C28 C30 C31 C32 C40
D3 D4 D5 D7 D8 D10 D12 D14 D22
E2 E5 E7
2023-2024 First Class First semester (Fall)
CHEM106 Chemistry
PRHS116 Principles of Horticultural Science
PAEC115 Principles of Agricultural Economy
MATH104 Mathematics
DEHR100 Democracy and Human Rights
ENGL101 English Language 1
ARAL102 Arabic Language 1
ENGI118 Engineering Drawing
2023-2024 First Class Second semester (Spring)
ANCH107 Analytical Chemistry
PRAP114 Principles of Animal Production
PRFI111 Principles of Food Industry
PREW133 Principles of Engineering workshops
STAT109 Statistical
COMA103 Computer Application 1
PRSS113 Principles of Soil Science
2023-2024 Second Class First semester (Fall)
ORCH105 Organic Chemistry
PRMI235 Principles of Microbiology
INCR230 Industrial Crops
PRPD227 Principles of Dairy
DAAE302 Design and analysis of agricultural experiments
COMA203 Computer Application 2
PAEX206 Principles of agricultural extension
CBAP200 Crimes of the defunct Baath Party
2023-2024 Second Class Second semester (Spring)
PHCH108 Physics Chemistry
BICH204 Biochemistry
STPP419 Stored Products Pests
FOSA228 Foods sanitation
FOPM219 Food Factories Management
FOPE240 Food Factories Engineering
ENGL201 Arabic Language 2
ARAL202 English Language 2
2023-2024 Third Class First semester (Fall)
FOCH364 Food Chemistry
CETE345 Cereal Technology
MOBI435 Molecular Biology
FOMI346 Food Microbiology
PRHN367 Principles of Human Nutrition
TEDS368 Technology of dates and sugar
AGMA442 Agricultural Marketing
2023-2024 Third Class Second semester (Spring)
DACH369 Dairy Chemistry
BAPA370 Bread and pastries
GEEN371 Genetics Engineering
DAMI372 Dairy Microbiology
MEPA373 Metabolic Pathways
LIDP374 Liquid Dairy Products
2023-2024 Fourth Class First semester (Fall)
FOTE495 Food technology 1
CHPR466 Cheese Processing
BITE467 Biotechnology 1
FOAN468 Food Analysis
MEFT498 Meat and fish Technology
HSHC405 Handling and storage of Horticultural Crops
REPR402 Research Project 1
2023-2024 Fourth Class Second semester (Spring)
FOPR470 Food Processing 2
BUIC471 Butter and Ice cream
BIOT6472 Biotechnology 2
QUCC473 Quality Control
THNU474 Therapeutic nutrition
SEMN474 Seminar
REPR403 Research Project 2