

T-103
2022

Program Specification

Program Name:	Food Science and Human Nutrition
Program Code (as per Saudi university ranking):	07210207
Qualification Level:	6 th Level
Department:	Food Science and Human Nutrition
College:	Agriculture and Veterinary Medicine
Institution:	Qassim University
Program Specification:	New <input type="checkbox"/> updated* <input checked="" type="checkbox"/>
Last Review Date:	March 2023

*Attach the previous version of the Program Specification.

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A. Program Identification and General Information

1. Program's Main Location :

College of Agriculture and Veterinary Medicine, Qassim University main campus.

2. Branches Offering the Program (if any):

Female section of the department at the main campus (at the female buildings).

3. Partnerships with other parties (if any) and the nature of each:

4. Professions/jobs for which students are qualified

- 1- Food Technology and processing.
- 2- Nutrition and dietitian.
- 3- Food quality control and food safety.

5. Relevant occupational/ Professional sectors:

Graduates of food science and human nutrition are qualified to work or to have jobs in various sectors such as:

- 1- Food Technologist: work in the food industry.
- 2- Nutritionist/Dietitian: work in nutrition departments at hospitals or with individuals to assess nutritional status and to promote healthy eating habits.
- 3- Food Safety Specialist: monitor food safety regulations to ensure that food products are safe for consumption.
- 4- Food quality Control Specialist: work in labs to ensure that food products meet standards and regulations.
- 5- Teaching and research in the food science and human nutrition field.

6. Major Tracks/Pathways (if any):

Major track/pathway	Credit hours (For each track)	Professions/jobs (For each track)
1. -----		
2.		
3.		
4.		

7. Exit Points/Awarded Degree (if any):

exit points/awarded degree	Credit hours
1. -----	
2.	
3.	

8. Total credit hours: (144)

B. Mission, Objectives, and Program Learning Outcomes

1. Program Mission:

Providing an Accredited Academic Program, Applied Research, Consulting Services and Partnerships in the Field of Food Science and Human Nutrition to Contribute to Sustainable Food Security.

2. Program Objectives:

- Providing student with knowledge, principles, concepts and recent developments in the field of food science and human nutrition.
- Acquiring students' skills of food processing and analysis and assessment of dietary requirements and meal planning.
- Providing student with skills and competences required for conducting applied research, community services, and practices in the field of food science and human nutrition to contribute to food security, safety and sustainability.
- Developing students' transferable skills to apply team work, leadership and problem-solving with respect of professional ethics.

3. Program Learning Outcomes*

Knowledge and Understanding

K1	Student remembers the principles and concepts related to characteristics and composition of food products
K2	Student lists the knowledge related to fundamentals of human nutrition and dietary requirements during different life stages.
K3	Student recovers the knowledge of recent food technologies, safety systems and their regulations.

Skills

S1	Student applies processing and preservation steps of food products with high quality and nutritive value.
S2	Student explains analysis and assessment methods of food products as well as assessing their safety.
S3	Student calculates the dietary requirements and plan meals for different life stages.

Values, Autonomy, and Responsibility

V1	Student applies advanced technologies and solve problems in the field of specialization.
V2	Student analyses data and planning nutritional programs in accordance with food habits and believes in KSA.



V3

Student follows team work rules and professional ethics in food establishments and nutrition departments.

* Add a table for each track or exit Point (if any)



C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Institution Requirements	Required	6	12	8.3
	Elective	-	-	-
College Requirements	Required	14	39	27.1
	Elective	3	6	4.2
Program Requirements	Required	32	63	43.8
	Elective	3	6	4.2
Capstone Course/Project	-	-	-	-
Field Training/ Internship	Required	1	12	8.3
Residency year	-	-	-	-
Others	Free Courses	-	6	4.2
Total		59	144	100

* Add a separated table for each track (if any).

2. Program Courses

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
Level 1	IC 101	Introduction to Islamic Culture	Required	-	2	Institution
	ARAB101	Economic System in Islam	Required	-	2	Institution
	ZOOL101	General Animal	Required	-	4	College
	CHEM103	General Chemistry	Required	-	3	College
	ENG101	English Language (1)	Required	-	3	College
	MATH165	Introduction to Calculus	Required	-	3	College
	PSYCH101	Thinking styles and teaching strategies	Required	-	2	College
Level 2	IC 102	Islam and building society	Required	IC 101	2	Institution
	ARAB 103	Arab Liberation	Required	-	2	Institution
	STAT 122	Introduction to Statistics	Required	-	2	College
	AGEC 202	The foundations of the agricultural economy	Required	-	2	College
	MGMT103	communication skills	Required	-	2	College
	FSNU 251	Fundamentals of Food Science and Human Nutrition	Required	-	2	College
	ENG 103	Listening and speaking English Language (2)	Required	ENG101	3	College
	PHYS 105	Introduction in physics	Required	-	3	College
Level 3	BOT 101	General Plant	Required		4	College
	ENG 118	English Language (3)	Required		3	College
	IC 103	Economic System in Islam	Required	IC 102	2	Institution
	CHEM 247	Principals of Organic Chemistry	Required	CHEM 103	3	Program
	CHEM 356	Basic in analytical chemistry	Required	CHEM 103	3	Program



Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	FSNU 220	Principles of Food Processing and Packaging Engineering	Required	MATH 165	2	Program
	FSNU 221	Principles of food processing	Required	FSNU 251	2	Program
Level 4	IC104	The foundations of the political system in Islam	Required	IC 101	2	Institution
	FSNU 212	Food Microbiology	Required	FSNU 251	3	Program
	BCH 301	Principles of biochemistry	Required	CHEM 247	3	College
	CNUT 321	Dietary requirements and meal planning	Required	FSNU 251	2	Program
	FSNU 232	Human physiology	Required	BOT 101	2	Program
	PAP 435	Handling and storage of horticultural crops	Required	-	2	Program
		Elective course College	Elective		2	College
		Elective course of the program	Elective		2	Program
		Free course	Elective		2	Program
Level 5	FSNU 311	Health and nutrition Affairs		FSNU 212	2	Program
	FSNU 314	Food chemistry & Analysis		CHEM 356	4	Program
	FSNU 322	Principles of Dairy Technology		BIO 301	2	Program
	CNUT 318	Nutritional biochemistry		BIO 301	3	Program
	FSNU 335	Nutrition Through the Life Cycle		FSNU 251	2	Program
		Elective course College			2	College
		Elective course of the program			2	Program
		Free course			2	Program
Level 6	FSNU 323	Food Processing (1): Cereals	Required	FSNU 221	2	Program
	FSNU 324	Food Processing (2): Vegetables and Fruits	Required	FSNU 221	2	Program
	325 FSNU	Food Processing(3)Meat & Fish	Required	FSNU 221	2	Program
	FSNU 326	Food Processing(4) Milk and dairy products	Required	FSNU 322	3	Program
	FSNU 328	Food Processing(6) Dates & their products	Required	FSNU 221	1	Program
	FSNU 344	Principles of Clinical Nutrition	Required	FSNU 231	2	Program
		Elective course College	Elective		2	College
		Elective course of the program	Elective		2	Program
		Free course	Elective		2	Program
Level 7	FSNU 456	Cooperative training	Required	At least 105 credit hours	12	Program
Level 8	PAP 415	Marketing of food products	Required	AGEC 202	2	Program
	BUS 107	Food establishments management	Required	AGEC 202	1	Program
	CNUT 322	Assessment of nutritional status	Required	FSNU 344	3	Program
	FSNU 416	Food Quality Assurance	Required	FSNU 314	2	Program



Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College, or Program)
	427 FSNU	Food Processing(5) Oils & Fats	Required	FSNU 221	2	Program
	FSNU 429	Food Biotechnology	Required	FSNU 212	3	Program
	FSNU 445	Nutrition and human diseases	Required	FSNU 444	3	Program
	CNUT 323	Application of computer in nutrition	Required	FSNU 444	1	Program
	FSNU 455	Special studies	Required	FSNU 251	1	Program

* Include additional levels (for three semesters option or if needed).

** Add a table for the courses of each track (if any)

3. Course Specifications:

Insert hyperlink for all course specifications using NCAAA template (T-104)

[2. Course Spec](#)

4. Program learning Outcomes Mapping Matrix:

Align the program learning outcomes with program courses, according to the following desired levels of performance (*I = Introduced* *P = Practiced* *M = Mastered*).

Course code & No.	Program Learning Outcomes								
	Knowledge and understanding			Skills			Values, Autonomy, and Responsibility		
	K1	K2	K3	S1	S2	S3	V1	V2	V3
A: Obligatory Courses									
IC 101								I	
ARAB 101								I	
ZOOL 101	I		I						
CHEM 103	I	I							
ENG 101	I								
MATH 165	I					I			
PSYC 101	I							I	
IC 102								I	
ARAB 103								I	
STAT 122			I	I					
AGAC 202			I					I	
MGMT 103									I
FSNU 251	I	I				I			
ENG 103		I	I						
PHYS 105			I		I				
BOT 101	I	I							

Course code & No.	Program Learning Outcomes								
	Knowledge and understanding			Skills			Values, Autonomy, and Responsibility		
	K1	K2	K3	S1	S2	S3	V1	V2	V3
ENG 118		I							I
IC 103								I	
CHEM 247	P	P							
FSNU 220	I			I			I		
FSNU 221	I		I						
CHEM 356					I		I		
IC 104								I	
FSNU 212					P		P		
BCH 301	P	P							
CNUT 321		P				P		P	
FSNU 232					P		P		
PAP 435		I	I	P					
FSNU 311			P	P			P		
FSNU 314	M				M			P	
FSNU 322	P				P				P
CNUT 318		M			M		P		
FSNU 335		M				M			
FSNU 323				M			M		
FSNU 324					M		P	P	
FSNU 325					M				M
FSNU 326				M			M		M
FSNU 328				M			M	M	
FSNU 344		M				M			M
FSNU 456				M		M		M	M
PAP 415	P	P							
BUS 107			P	P					P
FSNU 416			M				M		
FSNU 427					M		M		
FSNU 429					P		P		P
FSNU 445		M				M		M	
FSNU 455			M				P		P
CNUT 322		M			M		M		
CNUT 323						P		P	
B: Elective Courses (Faculty Level)									
FSNU 313			P				P		
FSNU 341		P			P		P		
FSNU 352		P				P			
PAP 217	I				I				
PAP 218	I	I							
PAP 219					I				I
PAP 380							I		

Course code & No.	Program Learning Outcomes								
	Knowledge and understanding			Skills			Values, Autonomy, and Responsibility		
	K1	K2	K3	S1	S2	S3	V1	V2	V3
APP 480					I		I		
APP 381							I		
VMD 348		I					I		
VMD 349	I				I				
VMD 496					I			I	
C: Elective Courses (Department Level)									
FSNU 329				M			M		M
FSNU 330				P			P		P
FSNU 336		P			P			M	
FSNU 337		P			P			M	
FSNU 338		P				P	P		
FSNU 342		P				P			
FSNU 351					P		P		
FSNU 453	P							P	
FSNU 417	P				P				

* Add a separated table for each track (if any).

5. Teaching and learning strategies applied to achieve program learning outcomes.

The following teaching & learning strategies that are applied to achieve food science and human nutrition program learning outcomes:

- Traditional lectures.
- Practical classes (Labs are available for the practical courses).
- Lab sessions.
- working groups.
- case studies.
- Visits to different food and nutrition sectors.
- Practical assignments requiring problem solving.
- Information searching.

6. Assessment Methods for program learning outcomes.

Describe assessment methods (Direct and Indirect) that can be used to measure the achievement of program learning outcomes in all areas.

The program should devise a plan for assessing Program Learning Outcomes (all learning outcomes should be assessed at least twice in the bachelor program's cycle and once in other degrees).

D. Student Admission and Support:

1. Student Admission Requirements

To be registered in the program, students should:

- Meet the operational rules of Qassim University.
- Have a high (secondary) School degree (12 years education), Scientific Pathway with score of $\geq 75\%$ (score may be higher or lower according to the levels and number of postsecondary students)
- Have a grade (around 3.25 GPA/5) in the first level of the college of Agriculture and Veterinary Medicine.
- Be accepted to be full time student.
- Be physically and mentally accepted.

2. Guidance and Orientation Programs for New Students

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

An orientation program is held every semester either in male or female sections of the program to:

- Introduce new students to the staff in each department sections.
- Give a brief description about the program and available jobs after graduation.
- Introduce to new students quality concepts, accreditation and surveys used in the program.
- Introduce to them their duties and rights during their study in the college, as well as students complaints process.

At the end of orientation, students are provided with the Course Handbook which contains detailed information about the courses they will study.

3. Student Counseling Services

(Academic, professional, psychological and social)

(Include only the exceptional needs offered to the students of the program that differ from those provided at the institutional level).

Academic counseling service in the department is a continuous process that is dedicated to the student's academic success as explained in the following points:

- The academic advice and guidance is operated according to the current University policy.
- Each student (male/female) is allocated a guidance tutor (from male/female staff members) who provides personal support to students including the program requirements and regulation of registration process, monitoring of progress file progression throughout the second semester of the first year of the student's university career. All staff in the department announce office hours clearly (6 hr/week), meanwhile staff operate an "open door" policy for individual support and students have access to staff by different ways include email. The guidance tutor is responsible for guiding students to select subjects in the semester beginning and informing him about the importance of prerequisites and the optimum way to complete the program in the proper time.





- Students can get support through the university web site (www.qu.edu.sa).

4. Special Support

(Low achievers, disabled, gifted, and talented students).

- Each undergraduate student enrolled in the program receive 1000 SR monthly (governmental promotion), this promotion is guaranteed unless the student score became < 2 and it is not awarded for students after 8 levels enrolment in the program. No teaching expenses are required from students and the whole program is offered for free and funded by the government.
- A student employment fund is available to enhance students to share in the academic and research activities of the program and earn some money. This process increases the practical skills of students.
- There are special facilities provided for the special need students (disabled) include:
Car parking – Special routes or ramps – Toilets – Lifts.



E. Faculty and Administrative Staff:

1. Needed Teaching and Administrative Staff

The following table shows the current Teaching and Administrative Staff at the department:

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professor	Food Science and human nutrition	- Food technology (dates, fruits & Vegetables) - Biochemistry - Human Physiology		3	1	4
Associate Professor	Food Science and human nutrition	- Human Nutrition - Food technology (meat, fats & oils) - Food packaging - Dairy Technology		4	3	7
Assistant Professor	Food Science and human nutrition	- Food technology (cereal, dates, fruits & Vegetables, Meat & oils) - Dairy technology - Human nutrition - Food Microbiology - Food chemistry and analysis - Food biotechnology		8	10	18
Lecturer	Food Science and human nutrition	- Food technology - Human nutrition		4	14	18
Teaching Assistant	Food Science and human nutrition	- Food technology - Human nutrition		4	8	12
Technicians and Laboratory Assistant	Food Science and human nutrition	Food Science and human nutrition		6	14	20
Administrative and Supportive Staff	Secretary	Secretary		2	11	13
Others (specify)						

F. Learning Resources, Facilities, and Equipment:

1. Learning Resources

Learning resources required by the Program (textbooks, references, and e-learning resources and web-based resources, etc.)

- The instructor teaching the course identifies the requirements of textbooks and other materials for teaching.
- Faculty members search for texts on-line, learn of recommended texts in professional journals and from publishers and colleagues at conferences.
- Faculty members ensure that the library subscribes to the necessary databases that give students access to the journals that they need.
- Requests for purchases of new materials that should be included in the library's holdings are made through a library committee at the college level.

2. Facilities and Equipment

(Library, laboratories, classrooms, etc.)

The food science and human nutrition program equipped with the required facilities to achieve its mission and objectives as follow:

- Classrooms.
- Laboratories (Chemistry – Biochemistry – food analysis and quality – food microbiology – milk and dairy products – food biotechnology).
- Food Processing pilot plant.
- Nutrition assessment.
- Meal preparation unit.

In addition to the university library which both male and female students can access either inside the university campus or online.

3. Procedures to ensure a healthy and safe learning environment

(According to the nature of the program)

The procedures and measures that are implemented in the Food Science and Human Nutrition department (both male and female sections) to ensure a healthy and safe learning environment are:

- **Health and Safety Procedures:** The program is applying and communicating university safety policies to all staff and students.
- **Training and Education:** The program is providing - throughout course instructors- training on lab safety, proper handling of chemicals and safety to all students at the beginning of practical courses before students entering labs.
- **Laboratory Safety:** The program announces the required personal protective equipment (PPE) on the entrance of all labs to ensure that students and staff wear appropriate PPE.
- **Food Handling and Safety:** In the food processing pilot plant food safety guidelines such as HACCP principles are applied.
- **First Aid and Medical Support:** The food science and human nutrition program is providing access to first-aid supplies.





- **Safety Inspections:** A routine safety inspections were conduct by staff from the Safety and Risk Unit (university level) for laboratories and other facilities to identify and address potential hazards promptly.



G. Program Quality Assurance:

1. Program Quality Assurance System

Provide a link to quality assurance manual.

https://quedusa-my.sharepoint.com/:b:/g/personal/e_hamad_qu_edu_sa/EcnIC-9Ozp1CmEaOEpbWkZ0By_EdXFwcsXKppC1ASOjOQg?e=DGLSJ2

2. Procedures to Monitor Quality of Courses Taught by other Departments

- The same procedure applied to monitor quality for courses taught by food science and human nutrition program is also applied for any course taught by other departments, as they also have to submit course reports and other documents at the end of each semester.

3. Procedures Used to Ensure the Consistency between Main Campus and Branches (including male and female sections).

The FSHN program taking different actions that assure the continuing of program quality in both male and female sections as the following:

- All course specifications are available in both sections.
- The course contents are the same and the same course materials are prepared by both male and female staff members.
- All exams are prepared by male and female staff members and male and female students will take all exams in the same time.
- All academic responsibilities are divided between male and female staff members.
- All program committees are formed from both male and female staff members.
- The same teaching strategies and assessment methods are used.
- The laboratories in the female section are similar to those in the male section.
- Allowing female students to enter the food processing pilot plant that available in the male section for practical training of the food processing courses.
- The program is applying the same program quality measures across the male and female sections.

4. Assessment Plan for Program Learning Outcomes (PLOs)

Domain	Program Learning Outcomes	Method of Assessment *	Date of Assessment
1.0	Knowledge and Understanding		
K1	Student remembers the principles and concepts related to characteristics and composition of food products.	Direct Methods: - Ex - Mapped-in courses (Pe, F)	At the end of every academic year
K2	Student lists the knowledge related to fundamentals of human nutrition and dietary requirements during different life stages.	Direct Methods: - Ex - Mapped-in courses (Pe, F)	At the end of every academic year

K3	Student recovers the knowledge of recent food technologies, safety systems and their regulations.	Direct Methods: - Ex - Mapped-in courses (Pe, F)	At the end of every academic year
2.0	Skills		
S1	Student applies processing and preservation steps of food products with high quality and nutritive value.	Direct Methods: - Ex - Mapped-in courses (Pe, F)	At the end of every academic year
S2	Student explains analysis and assessment methods of food products as well as assessing their safety.	Direct Methods: - Mapped-in courses (L, R, F, Cs or Hw).	At the end of every academic year
S3	Student calculates the dietary requirements and prepare meals for different life stages.	Direct Methods: - Mapped-in courses (L, R, F, Cs or Hw).	At the end of every academic year
3.0	Values, Autonomy, and Responsibility:		
V1	Student applies advanced technologies and solve problems in the field of specialization.	Direct Methods: - Ct - Mapped-in courses (R). Indirect Method: - Es (Section 5: "Work skills").	At the end of every academic year
V2	Student analyses data and planning nutritional programs in accordance with food habits and believes in KSA.	Direct Methods: - Ct - Mapped-in courses (L, R). Indirect Method: - Es (Section 1: "knowledge", and section 2: "Cognitive skills").	At the end of every academic year
V3	Student follows collective work rules and profession ethics in food establishments and nutrition departments.	Direct Methods: - Ct - Mapped-in courses (O, Wt). Indirect Method: - Es (Section 3: "Communication skills", and section 4: "Personal skills").	At the end of every academic year

5. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of teaching & assessment	Students	Course Evaluation Survey	At the end of each Semester
Learning resources and students' services	Students	Students' Experience Survey	At the end of the academic year
Program Quality	Students	Program evaluation survey	At the end of the academic year
Graduates skills and experience	Employers	Employers Evaluation survey	At the end of the academic year
Continuous improvement of the program quality	Alumni	Alumni evaluation survey	At the end of the academic year

Evaluation Areas/Aspects (e.g., leadership, effectiveness of teaching & assessment, learning resources, services, partnerships, etc.)

Evaluation Sources (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others.)

Evaluation Methods (e.g., Surveys, interviews, visits, etc.)

Evaluation Time (e.g., beginning of semesters, end of the academic year, etc.)

6. Program KPIs*

The period to achieve the target (____) year(s).

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
1	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	80	Data collection and calculations	At the end of each academic year.
2	KPI-P-02	Students' Evaluation of quality of learning experience in the program	4.5	Five-point scale questionnaire	At the end of each academic year.
3	KPI-P-03	Students' evaluation of the quality of the courses	4.55	Five-point scale questionnaire	At the end of each semester, and average of the academic year will be calculated.
4	KPI-P-04	Completion rate	75%	Data collection and calculations	At the end of each academic year.
5	KPI-P-05	First-year students retention rate	82	Data collection and calculations	
6	KPI-P-06	Students' performance in professional/ or national examination	NA	NA	NA
7	KPI-P-07	Graduates' employability and enrolment in postgraduate programs	75%	Five-point scale questionnaire	At the end of each academic year.
8	KPI-P-08	Average number of students in the class	25	Data collection and calculations	At the end of each semester, and average of the academic year will be calculated.
9	KPI-P-09	Employers' evaluation of the program graduates proficiency	4.5	Five-point scale questionnaire	At the end of each academic year.

No.	KPIs Code	KPIs	Targeted Level	Measurement Methods	Measurement Time
10	KPI-P-10	Students' satisfaction with the offered services	4.5	Five-point scale questionnaire	At the end of each academic year.
11	KPI-P-11	Ratio of students to teaching staff	10	Data collection and calculations	At the end of each academic year.
12	KPI-P-12	Percentage of teaching staff distribution	PhD-holder (M 44.8% F 55.2%) Total teaching staff (M 35.6% F 64.4%)	Data collection and calculations	At the end of each academic year.
13	KPI-P-13	Proportion of teaching staff leaving the program	0	Data collection and calculations	At the end of each academic year.
14	KPI-P-14	Percentage of publications of faculty members	100%	Data collection and calculations	At the end of each academic year.
15	KPI-P-15	Rate of published research per faculty member	2	Data collection and calculations	At the end of each academic year.
16	KPI-P-16	Citations rate in refereed journals per faculty member	300	Data collection and calculations	At the end of each academic year.
17	KPI-P-17	Satisfaction of beneficiaries with the learning resources	4.5	Five-point scale questionnaire	At the end of each academic year.
....					

*including KPIs required by NCAAA

H. Specification Approval Data:

COUNCIL / COMMITTEE	DEPARTMENT COUNCIL NO. 10 (1444 H).
REFERENCE NO.	119-10-44
DATE	24/6/1444 H 17/1/2023