



**Qassim University**

**College of Agriculture and Veterinary Medicine**

**FOOD SCIENCE AND HUMAN NUTRITION**

**PROGRAM (FSHN)**

**PROGRAM SPECIFICATIONS**

## A. Program Identification and General Information

1. Program title and code

Bachelor; BSc. of Food Science and Human Nutrition / FSNH

2. Total credit hours needed for completion of the program: 144 hr.

3. Award granted on completion of the program: FSNU degree

4. Major tracks/pathways or specializations within the program (eg. transportation or structural engineering within a civil engineering program or counseling or school psychology within a psychology program)

Food Science and technology specialist

Human nutrition specialist

5. Intermediate Exit Points and Awards (if any) (eg. associate degree within a bachelor degree program)

Not applicable

6. Professional occupations (licensed occupations, if any) for which graduates are prepared. (If there is an early exit point from the program (eg. diploma or associate degree) include professions or occupations at each exit point)

- Food Science and technology specialist
- Food safety and hygiene specialist
- Dairy sciences and technology specialist
- Food processing and preservation specialist
- Quality management in food manufacture.
- Human nutrition specialist
- Applied and community nutrition specialist
- Nutrition education specialist

7. (a) New Program  Planned starting date

(b) Continuing Program  Year of most recent major program review

Organization involved in recent major review (eg. internal within the institution, Accreditation review by:

Unit of Quality Assurance and Accreditation – College of Agriculture and Veterinary Medicine

8. Name of program chair or coordinator. If a program chair or coordinator has been appointed for the female section as well as the male section, include names of both.

Department Head: **Dr. Sami Abdullah Althwab**

9. Date of approval by the authorized body (MOE).

Campus Branch/Location	Approval By	Date
Main Campus of Qassim University	Council of Higher Education	Shaban 1438 H (2017)

## B. Program Context

1. Explain why the program was established.

a. Summarize economic reasons, social or cultural reasons, technological developments, national policy developments or other reasons.

### **Economic reasons:**

- Contribute to the provision of food products of high nutritive value at reasonable prices.
- Diminish the proportion and frequencies of food poisoning, which in turn reduce the cost of treatment and health care.
- Using modern methods and techniques to reduce wastage during manufacturing operations, storage, and handling of food, which in turn diminish the final cost of the food products.
- Reduce the incidence of malnutrition and related disease, thus reducing the expenses of treatment of nutritional problems.
- Contribute to the reduction of complications associated with chronic diseases such as diabetes, thereby reducing the expenses of medications and medical cost.

### **Social and cultural reasons:**

- Maintain and encourage good eating habits of populations and working to modify bad food habits and wrong food behaviors that may worsen the health and nutritional status.
- Providing sound nutritional information to at risk populations (e.g., elderly, limited income, and children).
- Collaboration with community agencies for improving nutritional and health status of Saudi population. Support takes several forms e.g. technical assistance, publications, and training and workshop participation to ensure that populations receive timely, accurate and appropriate information on basic nutrition and impact of nutrition on diseases.
- Cooperation with organizations working in the field of food processing to improve food quality, the enactment of food laws and regulations necessary to preserve the health of the community
- Safety awareness on health hazards of food additives and food contamination.

### **Technological developments:**

- FSHN program graduates students capable of using new and modern techniques for improving nutritional status of the community, especially vulnerable groups.
- FSHN program provides food technology and safety information to industry, as well as consumers, entrepreneurs, regulators, other faculty and the news media.

b. Explain the relevance of the program to the mission and goals of the institution.

- The FSHN program is almost relevant to the mission of the Qassim University, which has a comprehensive mission statement "*Provision of a high quality, accredited education producing competent graduates who meet the needs of the labour market, conducting applied research and offering quality community services to develop the Qassim Region and to contribute to the building of a knowledge-based economy*". The FSHN program is designed to provide the Kingdom with skilled human nutrition specialist and food sciences
- specialist coincide with the university mission.
- Providing manpower needed for the development plans in the Kingdom.
- Becoming acknowledged as being among the highest quality programs in the Middle East and eventually beyond.

2. Relationship (if any) to other programs offered by the institution/college/department.

a. Does this program offer courses that students in other programs are required to take?

**Yes**

If yes, what has been done to make sure those courses meet the needs of students in the other programs?

To make sure those courses meet the needs of students in the other programs, a joint meeting is held with concerned department (Plant production and protection and Animal Production and breeding Departments) to develop a course specification based on the course description that meet their student's needs. Moreover, the course constituents prepared by the concerned programs are well known by course instructors.

- **Courses offered by FSHN program to:**

#### **1- College:**

- Food Safety (313 FSNU)
- Nutrition and Immunity in the Human (FSNU 341)
- Functional Foods (FSNU 352)

#### **2- Plant production and protection department:**

- Food Processing (6): Dates and their products (FSNU 328)
- Fundamentals of Food Science and Human Nutrition (FSNU 251)

**3- Animal production and breeding:**

- Animal Production Technology (FSNU )

b. Does the program require students to take courses taught by other departments?

**Yes**

If yes, what has been done to make sure those courses in other departments meet the needs of students in this program?

Required courses have been requested and Joint committees are formed from the concerned departments to evaluate FSHN department needs.

**Courses taught for FSHN program students by other department:**

- Principles of Organic Chemistry (CHEM 247)
- Handling and Storage of Horticultural Crops (PAP 435)
- Food Firms Administration (MGMT 107)
- Basic in Analytical Chemistry (CHEM 356)
- Marketing of Food Products (PAP 415)

3. Do students who are likely to be enrolled in the program have any special needs or characteristics? (eg. Part time evening students, physical and academic disabilities, limited IT or language skills).

No, we do not have any program students studying part-time to achieve the special needs.

4. What modifications or services are you providing for special needs applicants?

We do not have the program students with special needs and thus not being in any program modifications.

**C. Mission, Goals and Objectives**

**1. Program Mission Statement**

To provide advanced and distinguished program in learning, scientific research and community service in the field of food science and human nutrition for ensuring satisfaction of labor market in the kingdom of Saudi Arabia.

**2. List Program Goals:**

- Knowing student with knowledge, principles, concepts and recent developments in the field of food science and human nutrition.
- Providing student with skills, techniques and advanced practices for working effectively in the field of food science and human nutrition.
- Training student on applying advanced technologies, collective work, data interpretation and decisions making and leading ability with respect of profession’s ethics.

3. List major objectives of the program within to help achieve the mission. For each measurable objective describe the measurable performance indicators to be followed and list the major strategies taken to achieve the objectives.

Measurable Objectives	Measurable Performance Indicators	Major Strategies
<b>1- Knowledge:</b>		
1.1. Knowing the principles and concepts related to characteristics and composition of food, dairy and their products.  1.2. Providing student with knowledge related to fundamentals of human nutrition and dietary requirements during different life stages.  1.3. Supplying student with knowledge of recent food and dairy technologies and safety systems and their regulations.	Pe, L, F, R, O, Hw, Pr, Fr, It, Q, Rr, Cs, Wt	Lectures, student activities, small group work, whole group and small group discussion, lab demonstrations , debate and lab demonstrations

**2- Skills:**

<p>2.1. Applying skills of processing and preservation of food and dairy products with high quality and nutritive value.</p> <p>2.2. Acquiring skills of analysis and assessment of food and dairy products as well as assessing their safety.</p> <p>2.3. Training skills of dietary requirements calculation and meals preparation for different life stages.</p>	<p>Pe, L, F, R, O, Hw, Pr, Fr, It, Q, Rr, Cs, Wt</p>	<p>Lectures, student activities, a wide variety of hands-on student learning activities, research activities, small group work, whole group and small group discussion, research activities, lab demonstrations</p>
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**3- Competences:**

<p>3.1. Training student on applying the advanced technologies and solve problems in field of specialization.</p> <p>3.2. Acquiring skills of data collecting and analyzing as well as planning nutritional programs in accordance with food habits and believes in KSA.</p> <p>3.3. Acquiring the leading ability and respecting profession ethics in food establishments and nutrition departments.</p>	<p>Pe, L, F, R, O, Hw, Pr, Fr, It, Q, Rr, Cs, Wt</p>	<p>Lectures, student activities, a wide variety of hands-on student learning activities, research activities, small group work, whole group and small group discussion, research activities, lab demonstrations</p>
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**Measurable Performance Indicators:**

Periodical exams	Pe	Home work	Hw	Reading of course references	Rr
Practical exam	L	Presentation	Pr	Case study	Cs
Final exam	F	Field research	Fr	Working team	Wt
Reports	R	Information technology	It		
Oral	O	Quiz	Q		

**D. Program Structure and Organization**

1. Program Description: List the core and elective program courses offered each semester from Prep Year to graduation using the below Curriculum Study Plan Table (A separate table is required for each branch IF a given branch offers a different study plan).

### Curriculum Study Plan Table

\* **Prerequisite** – list course code numbers that are required prior to taking this course.

• **University requirements (12 units of study credits)**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Adopted	
IC 101	Introduction to Islamic Culture	2	0	2	
IC 102	Islam and building society	2	0	2	101 IC
IC 103	Economic System in Islam	2	0	2	101 IC
IC 104	The foundations of the political system in Islam	2	0	2	101 IC
ARAB 101	Arab	2	0	2	
ARAB 103	Arab Liberation	2	0	2	
Total		12	0	12	

• **Obligatory courses for college (39 units of study credits hours)**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Adopted	
CHEM 103	General Chemistry – 1	2	1	3	-
PHYS 103	Principles in physics	2	1	3	-
PSYCH 101	Thinking styles and learning skills	2	0	2	-
ZOOL 101	General Animal	3	1	4	-
MGMT 103	communication skills	2	0	2	-
STAT 122	Introduction to Statistics	1	1	2	-
MATH 165	Introduction to Calculus	3	0	3	-
BCH 301	The foundations of biochemistry	2	1	3	-
AGEC 202	The foundations of the agricultural economy	2	0	2	-
BOT 101	General Plant	3	1	4	101 CHE
FSHN 251	Fundamentals of Food Science and Human Nutrition	2	0	2	-
ENG 101	English Language	3	0	3	-
ENGF 103	Listening and speaking English Language	1	2	3	ENG101
ENGF 181	English reading skills	1	2	3	ENG101
Total		29	10	39	

• **Elective courses College (student chooses 6 units of study credits)**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Adopted	
FSNU 313	Food safety	1	1	2	BCH 301
FSNU 341	Nutrition and immunity in the human	2	0	2	BCH 301
FSNU 352	Functional foods	1	1	2	BCH 301
PAP 217	Principles of Pest Control	1	1	2	101 CHM
PAP 218	Agricultural environment and climate change	1	1	2	POT 101
PAP 219	The principles of biotechnology	1	1	2	BCH 301
APP 380	Animals and birds ornamental production	1	1	2	-
APP 480	Organic farm animal products	1	1	2	-
APP 381	Technical management of animal production farms	1	1	2	-
VMD 496	Health and welfare of animals fungal	1	1	2	BCH 301
VMD 349	Tissue Culture	1	1	2	BCH 301
VMD 348	Molecular Biology	1	1	2	BCH 301
Total		13	11	24	

• **Obligatory courses from outside the department (11 units of study credits)**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Adopted	
CHM 247	Principals of Organic Chemistry	2	1	3	CHM 103
PAP 435	Handling and storage of horticultural crops	1	1	2	POT 101
MGMT 107	Food establishments management	1	0	1	PAP 202
CHEM 356	The principles of analytical chemistry	2	1	3	CHM 103
PAP 415	Marketing of food products	1	1	2	AGEC 202
CNUT 318	Nutritional Biochemistry	2	1	3	BCH 301

CNUT 321	Dietary Requirements and Meal Planning	1	1	2	FSNU 251
CNUT 322	Assessment of Nutritional Status	2	1	3	FSNU 344
CNUT 323	Application of Computer in Nutrition	0	1	1	FSNU 321
Total		7	4	11	

• **Obligatory courses from within the section (64 credits Hours)**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Adopted	
FSNU 212	Food Microbiology	2	1	3	FSNU 251
FSNU 320	Principles of Food Processing and Packaging Engineering	1	1	2	Math 165
CNUT 231	Dietary Requirements and Meal Planning	1	1	2	FSHN 251
FSNU 232	Human Physiology	1	1	2	Zol 101
FSHN 311	Health and nutrition Affairs	1	1	2	FSHN 212
FSNU 314	Food chemistry & Analysis	2	2	4	CHEM356
FSNU 221	Principles of food Processing	1	1	2	BCH 301
FSNU 322	Principles of Dairy Technology	1	1	2	BCH 301
FSNU 323	Food Processing (1): Cereals	1	1	2	FSNU 221
FSNU 324	Food Processing (2): Vegetables and Fruits	1	1	2	FSNU221
CNUT 334	Nutritional biochemistry	2	1	3	BCH 301
FSNU 335	Nutrition Through the Life Cycle	2	0	2	FSHN 251
FSNU 325	Food Processing(3)Meat & Fish	1	1	2	FSNU 221
FSNU 326	Food Processing(4) Milk and dairy products	1	2	3	FSHN 322
FSNU 327	Food Processing(5) Oils & Fats	1	1	2	FSNU 221
FSNU 328	Food Processing(6) Dates & their products	1	1	2	FSNU 221
FSNU 429	Food Biotechnology	2	1	3	FSNU 212
FSNU 416	Food Quality Assurance	1	1	2	FSNU 314
CNUT433	Application of computer in nutrition	0	1	1	FSNU 321
FSNU 344	Principles of Clinical Nutrition	1	1	2	FSNU 231
FSNU 445	Nutrition and human diseases	2	1	3	FSNU 344
CNUT 446	Nutritional Assessment	1	2	3	FSNU 344
FSNU 455	Special studies	0	2	2	FSNU251
FSNU 456	Cooperative training	0	11	11	105 credit hours at least
Total		27	37	64	

• **Elective courses of the program courses (student choose 6 Accredited units)**

No. & Code of Course	Course name	Studying units			Prerequisite
		Theoretical	Practical	Accredited	
FSNU 336	Nutrition Education and Counseling	1	1	2	FSNU 335
FSNU 330	Fat dairy product and ice cream	1	1	2	FSNU 322
FSHN 329	Cheese technology and fermented dairy products	1	1	2	FSNU 322
FSNU 337	Community nutrition	2	0	2	FSNU 251
FSNU 338	Sports nutrition	2	0	2	FSNU 321
FSNU 342	Malnutrition diseases	2	0	2	FSNU 251
FSHN 351	Sensory food evaluation	1	1	2	FSHN 314
FSNU 417	food packaging	2	0	2	FSHN 220
FSHN 453	Scientific terms in food sciences and human nutrition	2	0	2	FSHN 251
Total		14	4	18	

**Levels of FSHN program study plan:**

• **First level**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Credit	
IC 101	Introduction to Islamic Culture	2	0	2	-
ARAB 101	Economic System in Islam	2	0	2	-
ZOOL 101	General Animal	3	1	4	-
CHEM 103	General Chemistry	2	1	3	-
ENG101	English Language (1)	1	2	3	-
MATH 165	Introduction to Calculus	3	0	3	-
PSYCH 101	Thinking styles and teaching strategies	2	0	2	-
Total		19	4	15	

• **Second level**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Credit	
IC 102	Islam and building society	2	0	2	IC 101
ARAB 103	Arab Liberation	2	0	2	-
STAT 122	Introduction to Statistics	1	1	2	-
AGEC 202	The foundations of the agricultural economy	2	0	2	-
MGMT103	communication skills	2	0	2	-
FSNU 251	Fundamentals of Food Science and Human Nutrition	2	0	2	-
ENGF 103	Listening and speaking English Language (2)	3	0	3	ENG101
PHYS 105	Introduction in physics	2	1	3	-
Total		16	2	18	

• **Third level**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Credit	
BOT 101	General Plant	3	1	4	
ENG 118	English Language (3)	3	0	3	
IC 103	Economic System in Islam	2	0	2	IC 102
CHEM 247	Principals of Organic Chemistry	2	1	3	CHEM 103
CHEM 356	Basic in analytical chemistry	2	1	3	CHEM 103
FSNU 220	Principles of Food Processing and Packaging Engineering	1	1	2	MATH 165
FSNU 221	Principles of food processing	1	1	2	FSNU 251
Total		14	5	19	

• **Fourth level**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Credit	
IC104	The foundations of the political system in Islam	2	0	2	IC 101
FSNU 212	Food Microbiology	2	1	3	FSNU 251
BCH 301	Principles of biochemistry	2	1	3	CHEM 247
CNUT 321	Dietary requirements and meal planning	1	1	2	FSNU 251
FSNU 232	Human physiology	1	1	2	BOT 101
PAP 435	Handling and storage of horticultural crops	1	1	2	-
	Elective course College			2	
	Elective course of the program			2	
	Free course			2	
Total		9	5	20	



- Fifth level**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Credit	
FSNU 311	Health and nutrition Affairs	1	1	2	FSNU 212
FSNU 314	Food chemistry & Analysis	3	1	4	CHEM 356
FSNU 322	Principles of Dairy Technology	1	1	2	BIO 301
CNUT 318	Nutritional biochemistry	2	1	3	BIO 301
FSNU 335	Nutrition Through the Life Cycle	2	0	2	FSNU 251
	Elective course College	0	0	2	
	Elective course of the program	0	0	2	
	Free course	0	0	2	
<b>Total</b>		<b>9</b>	<b>4</b>	<b>19</b>	

- Sixth level**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Credit	
FSNU 323	Food Processing (1): Cereals	1	1	2	FSNU 221
FSNU 324	Food Processing (2): Vegetables and Fruits	1	1	2	FSNU 221
325 FSNU	Food Processing(3)Meat & Fish	1	1	2	FSNU 221
FSNU 326	Food Processing(4) Milk and dairy products	1	2	3	FSNU 322
FSNU 328	Food Processing(6) Dates & their products	1	1	1	FSNU 221
FSNU 344	Principles of Clinical Nutrition	1	1	2	FSNU 231
	Elective course College	0	0	2	
	Elective course of the program	0	0	2	
	Free course	0	0	2	
<b>Total</b>		<b>6</b>	<b>7</b>	<b>19</b>	

- Seventh level**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Credit	
FSNU 456	Cooperative training	0	12	12	105 UNIT at least
<b>Total</b>		<b>0</b>	<b>12</b>	<b>12</b>	

- Eight level**

No. & Code of Course	Course Name	Distribution modules			Prerequisite
		Theoretical	Practical	Credit	
PAP 415	Marketing of food products	2	0	2	AGEC 202
BUS 107	Food establishments management	1	0	1	AGEC 202
CNUT 322	Assessment of nutritional status	1	2	3	FSNU 344
FSNU 416	Food Quality Assurance	1	1	2	FSNU 314
427 FSNU	Food Processing(5) Oils & Fats	1	1	2	FSNU 221
FSNU 429	Food Biotechnology	2	1	3	FSNU 212
FSNU 445	Nutrition and human diseases	2	1	3	FSNU 444
CNUT 323	Application of computer in nutrition	0	1	1	FSNU 444
FSNU 455	Special studies	0	1	1	FSNU 251
<b>Total</b>		<b>10</b>	<b>8</b>	<b>18</b>	

#### 4. Learning Outcomes in Domains of Learning, Assessment Methods and Teaching Strategy

Program Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning and teaching.

*Saudi Arabia Qualifications Framework* (SAQF) provides five learning domains. Learning outcomes are required in the first four domains and some programs may also require the Psychomotor Domain.

On the table below are the three SAQF Learning Domains, numbered in the left column.

**First**, insert the suitable and measurable learning outcomes required in each of the learning domains. **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each program learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process.

	NQF Learning Domains and Learning Outcomes	Teaching Strategies	Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	Student remembers the principles and concepts related to characteristics and composition of food, dairy and their products.	<ul style="list-style-type: none"> <li>▪ Traditional lectures.</li> <li>Practical classes (Labs are available for the practical courses)                             <ul style="list-style-type: none"> <li>▪ group work</li> <li>▪ case studies</li> </ul> </li> <li>Workshops</li> </ul>	Two exams per semester (week 6 and 12), 20 %. Final written exam with different models of questions (complete, compare, multiple choice and sort essays ..etc.) 50 or 60 %. Practical exam at the end of semester (20 or 30 %) according to course type. Home work assignment (5 %) for some courses by searching in textbooks and the web. Assessment of students interactions in classrooms and team work. Quizzes (5 %) for some courses.
1.2	Student lists the knowledge related to fundamentals of human nutrition and dietary requirements during different life stages.		
1.3	Student recovers the knowledge of recent food and dairy technologies, safety systems and their regulations.		
<b>2.0</b>	<b>Skills</b>		
2.1	Student applies processing and preservation steps of food and dairy products with high quality and nutritive value.	<ul style="list-style-type: none"> <li>▪ The practical classes aim to train the students how to do laboratory tests with the right manner.</li> <li>▪ Information searches                             <ul style="list-style-type: none"> <li>▪ Case studies</li> </ul> </li> <li>▪ Laboratory sessions</li> <li>▪ Visits to different food and nutrition sectors.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Students presentations</li> <li>▪ Students seminars</li> <li>▪ Laboratory reports                             <ul style="list-style-type: none"> <li>▪ Exams</li> </ul> </li> </ul>
2.2	Student explains analysis and assessment methods of food and dairy products as well as assessing their safety.		
2.3	Student calculates the dietary requirements and prepare meals for different life stages.		
<b>3.0</b>	<b>Competences</b>		
3.1	Student applies advanced technologies and solve problems in the field of specialization.	Lectures, tutorial and Labs Group assignment Practical assignments requiring problem solving Working group	Project reports and examination Laboratory performs Short and formal reports Continuous laboratory assessment Exams
3.2	Student analyses data and planning nutritional programs in accordance with food habits and believes in KSA.		
3.3	Student follows collective work rules and profession ethics in food establishments and nutrition departments.		

### E. Regulations for Student Assessment and Verification of Standards

What processes will be used for verifying standards of achievement (eg check marking of sample of tests or assignments? Independent assessment by faculty from another institution) (Processes may vary for different courses or domains of learning.)

- **Minimum Passing Grade in each course: 60%.**
- **Grade distribution and judgment.**

Grade symbol %	F	D	D+	C	C+	B	B+	A	A+
	<60	60-<65	65-<70	70-<75	75-<80	80-<85	85-<90	90-<95	95-100
Value from 5	1	2	2.5	3	3.5	4	4.5	4.75	5
General mark	Failed	Fair	High Fair	good	High G	VG	High VG	Exc.	Distinction

*G: Good, VG: very good, Exc.: Excellent Judgment (fair –distinction means success)*

#### The following is the regulations of Qassim Univ. for programs

- For courses include lectures and practical score divided as follows: two semester exams 20%, practical exam 20%, quizzes and activities 10%, Final written exam 50%
- For courses include only lectures score divided as follows: semester exams 30%, quizzes and activities 10%, Final written exam 60%.

### Authorized Signatures

Name	Signature	Date
Head of department		