

Master of Science in Food Science (Male)

Level -1

Code & No.	Course Title	Credits
501 FSN	Advanced Food Chemistry	3
521 FSN	Advanced Food Microbiology	3
518 AGECE	Design and Analysis of Agricultural experiment	3
Total		9

Level - 2

Code & No.	Course Title	Credits
502 FSN	Advanced Food Analysis	2
556 FSN	Edible Lipids	2
055 ENGL	English Language	6
Total		10

Level - 3

Code & No.	Course Title	Credits
522 FSN	Food Safety	2
527 FSN	Thermal Processing of Foods	2
531 FSN	Chemistry and Technology of Dairy	2
534 FSN	Chemistry and Technology of Cereals	2
595 FSN	Seminar	1
Total		9

Level - 4

Code & No.	Course Title	Credits
524 FSN	Food Biotechnology	2
537 FSN	Meat Science	2
538 FSN	New Food Products Development and Food Sensory Evaluation	2
Total		6

Level - 5

Code & No.	Course Title	Credits
600 FSN	Thesis	6
Total		6

- 501 FSN Advanced Food Chemistry** **3(2+1)**
Physical and functional properties, as well as, the chemical composition of macronutrients, (carbohydrates, fats and proteins) - Chemistry of additives, flavoring and coloring agents - Effect of processing on the functional and nutritional value of nutrients.
- 502 FSN Advanced Food Analysis** **2(1+1)**
Methods of extraction and purification of components - Electrophoresis, gas chromatography, high performance liquid chromatography (HPLC) - Advanced methods for protein separation and amino acid analysis - Use of biological experiments in food analysis.
- 521 FSN Advanced Food Microbiology** **3(2+1)**
Physiology of food microorganisms - Effect of environmental conditions and compositional factors on food microorganisms - Sporulation and the role of spores in food spoilage - Microbial toxins in food - Classification of food microorganisms - Recent methods for the detection and the identification of food microorganisms.
- 522 FSN Food Safety** **2(2+0)**
Toxicants occurring in foods: from plants, animals, chemical and microbial sources - Effects of preparation, handling and processing on food safety - Mechanisms of food poisoning - Methods for assessment food safety – Food borne diseases.
- 524 FSN Food Biotechnology** **2(1+1)**
Fermentation biochemistry - Technology of enhancing growth of microorganisms - Biological reactors - Kinetics of biotechnology - Enzymes and immobilized microbial cells - Use of biotechnology in the production of biomasses and biological materials - Use of biotechnology in waste treatment and disposal - Advances in biotechnology.
- 527 FSN Thermal Processing of Foods** **2(1+1)**
Different methods of heat treatment - Heat resistance and ways of measuring it - Heat penetration curves - Estimation of destruction due to sterilization and pasteurization - Estimation of the rate of different nutrients losses during heat treatments - Effect of heat treatment on the nutritional value and the specifications of food products.
- 531 FSN Chemistry and Technology of Dairy** **2(1+1)**
Chemical composition of milk and its physical characteristics - Effects of processing on the composition of milk and its properties - Technological developments in the manufacture of traditional and new milk products.
- 534 FSN Chemistry and Technology of Cereals** **2(1+1)**
Detailed study on cereal components and their role in physical, chemical, rheological and quality of bakery products - Pin milling - Air classification - Advanced studies in the manufacture of cereals products.

537 FSN Meat Science**2(1+1)**

Muscles and related tissues - Postmortem changes and their effect on meat properties - Muscle components and their functional properties - Effect of processing on the functional properties of muscle components - Recent technological advances in red meat, poultry and fish processing.

538 FSN New Food Products Development and Food Sensory Evaluation 2(1+1)

Formulation of new products - Utilization of non-conventional sources of raw materials - Collection and evaluation of concepts - Development stages - Sensory evaluation methods - Training - Statistical method for sensory evaluation.

556 FSN Edible Lipids**2(1+1)**

Evaluation of different sources of fats - Physical and chemical changes that take place during different stages of processing - Recent trends in production technology of milk analogues - Fats and health inter-relationship.

595 FSN Seminar**1(1+0)**

The students will present a report on a selected topic in the field of food science under the supervision of a member of the teaching staff who is responsible for that particular field of study.

600 FSN Thesis**6(0+6)**

Master of Science in Human Nutrition (Male and Female)

Level - 1

Code & No.	Course Title	Credits
513 FSN	Vitamins & Minerals in Nutrition	2
523 AGEM	Nutritional Surveys	3
055 ENGL	English Language	6
Total		11

Level - 2

Code & No.	Course Title	Credits
506 FSN	Metabolism	3
511 FSN	Lipids and Carbohydrates in Nutrition	3
Total		6

Level - 3

Code & No.	Course Title	Credits
516 FSN	Inborn Errors of Metabolism	3
595 FSN	Seminar	1
518 AGECE	Design and Analysis of Agricultural Experiments	3
532 AGEM	Nutritional Extension	2
Total		9

Level - 4

Code & No.	Course Title	Credits
503 FSN	Nutrients Biological Evaluation	2
514 FSN	Nutrients Analysis	2
522 FSN	Food Safety	2
535 FSN	Advanced Applied Nutrition	2
597 FSN	Selected Topics in Human Nutrition	2
521 AGEM	Maternity and childhood care (Advanced)	2
533 AGEM	Dietary Programs Planning	2
Total		14

Level - 5

Code & No.	Course Title	Credits
600 FSN	Thesis	6
Total		6

503 FSN Nutrients Biological Evaluation

2(2+0)

The student will study the different methods for nutrients assessment and research plan - Experimental designs - Using computer in nutrition research - Use and evaluation of test animals - Formulation of diets - Calculation - Interpretation of results and data, and preparation for presentation.

506 FSN Metabolism

3(2+1)

Cell structure - Digestive system - Enzymes - Energy - Carbohydrate metabolism - Lipid metabolism - Protein metabolism - Integration and regulation of metabolism.

511 FSN Lipids and Carbohydrates in Nutrition

3(3+0)

Lipids, nomenclature, classification, physical and chemical aspects - Function of lipids - Recent methods in lipid metabolism - Cholesterol and control of plasma cholesterol concentration - Carbohydrates classification - Some reactions of carbohydrate - Functions of carbohydrate classes in foods.

512 FSN Proteins in Nutrition

2(2+0)

Structures and functions of protein and amino acids - Dietary sources of protein and amino acids - Evaluation of protein quality - Metabolism, integration and catabolism of amino acids - Protein turnover, urea synthesis.

513 FSN Vitamins & Minerals in Nutrition

2(2+0)

Chemical and physical characteristics of vitamins and minerals - Role of vitamins and minerals in metabolism - Deficiency of vitamins and minerals and their relation with protein-calorie malnutrition diseases - Effect of food constituents on the metabolism of vitamins and minerals.

514 FSN Nutrients Analysis

2(1+1)

Extraction, isolation, purification of nutrients - Use of advanced methods for protein evaluation - Chromatographic separation of fatty acids - Determination of minerals and lipids - Use of biological methods for nutrients analysis.

516 FSN Inborn Errors of Metabolism

3(2+1)

Inborn errors of protein and amino acids metabolism - Inborn errors of carbohydrate metabolism - Inborn errors of lipid metabolism.

522 FSN Food Safety

2(2+0)

Toxins occurring in foods: from plants, animals, chemical and microbial sources - Effects of preparation, handling and processing on food safety - Mechanisms of food poisoning - Different methods for identification of food poisoning - Food transmitted diseases.

535 FSN Advanced Applied Nutrition **2(0+2)**

Nutrition and weight control - Nutrition and physical fitness - Nutrition support in disabling diseases - Drug nutrient interaction - Adults and elderly nutrition.

595 FSN Seminar **1(1+0)**

The student will present a report on a selected topic in the field of human nutrition under the supervision of a member of the teaching staff who is responsible for that particular field of study.

597 FSN Selected Topics in Human Nutrition **2(2+0)**

Study of new trends and developments in human nutrition as selected by the department.

600 FSN Thesis **6(0+6)**