UM | Faculty of Agricultural and Food Sciences

Effective September 2021

B.Sc. in Human Nutritional Sciences
(Food Industry Option)

Year 1

Course No.	Course Name	Credit Hours
HNSC 1200	Food: Facts and Fallacies	3
HNSC 1210	Nutrition for Health and Changing Lifestyles	3
AGRI 1600	Introduction to Agrifood Systems	3
CHEM 1100	Introductory Chemistry 1: Atomic and Molecular Structure and Energetics	3
CHEM 1130[1] or CHEM 1110	Introduction to Organic Chemistry or Introductory Chemistry 2: Interaction, Reactivity, and Chemical Properties	3
BIOL 1410[2] or BIOL 1020[2] *and* BIOL 1030[2]	Anatomy of the Human Body or Biology 1: Principles and Themes *and* Biology 2: Biological Diversity, Function and Interactions	3 or 6
BIOL 1412[2]	Physiology of the Human Body	3
PSYC 1200[7] or SOC 1000[7]	Introduction to Psychology or Introduction to Sociology	6 or 3
Free Elective(s)[2,7]		0-6
Total credit hours		30

Year 2

Course No.	Course Name	Credit Hours
HNSC 2000	Research Methods and Presentation	3
HNSC 2130	Nutrition through the Life Cycle	3
HNSC 2140	Basic Principles of Human Nutrition	3
HNSC 2150	Composition, Functional, and Nutritional Properties of Food	3
HNSC 2160	Food Preparation and Preservation	3
AGRI 2400[3]	Experimental Methods in Agricultural and Food Sciences	3
CHEM 2730/ MBIO 2730[4]	Elements of Biochemistry 1	3
CHEM 2740[5]	Introduction to the Biochemistry Laboratory	3
CHEM 2750/ MBIO 2750[6]	Elements of Biochemistry 2	3
GMGT 1010 or ABIZ 1000	Business and Society or Introduction to Agribusiness Management	3
Total credit hours		30

Year 3

Course No.	Course Name	Credit Hours
HNSC 3260*	Food Quality Evaluation	3
HNSC 3330	Ingredient Technology for Designed Foods	3
FOOD 4150	Food Microbiology	3
HEAL 2600	Integration of Health Determinants of Individuals	3

Note: Any discrepancies between this document and the Academic Calendar, the Academic Calendar takes precedent.

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HEAL 3000	Introduction to Social Epidemiology	3
MKT 2210	Fundamentals of Marketing	3
Concentration Electives[8]		6
Free Electives[7]		6
Total credit hours		30

Year 4

Course No.	**Course Name**	**Credit Hours**
HNSC 3300 or HNSC 3310	Vitamins and Minerals in Human Health or Macronutrients and Human Health	3
HNSC 4100	Current Issues in Food and Human Nutrition	3
HNSC 4280	Food Product Development	3
HNSC 4364	Food Industry Option Practicum	6
FOOD 4310*	Introduction to HACCP	3
Concentration Electives[8]		9
Free Elective[7]		3
Total credit hours		30

Notes:

1. CHEM 2100 (Organic Chemistry 1: Foundations of Organic Chemistry) can be substituted for CHEM 1130 (Introduction to Organic Chemistry).

2. Students selecting BIOL 1020 and BIOL 1030 are not required to complete BIOL 1410. If BIOL 1020 and BIOL 1030 are taken, BIOL 1412 will be used towards free electives, reducing the total credit hours of free electives required from 15 to 12. Under required courses, students must take BIOL 1412 (Physiology of the Human Body) or students can substitute both BIOL 1410 and BIOL 1412 with both BIOL 2410 (Human Physiology 1) and BIOL 2420 (Human Physiology 2).

3. STAT 2000 (Basic Statistical Analysis 2) can be substituted for AGRI 2400 (Experimental Methods in Agricultural and Food Sciences).

4. Under required courses, students can take either CHEM 2730/MBIO 2730 (Elements of Biochemistry 1) or CHEM 2700/MBIO 2700 (Biochemistry I: Biomolecules and an Introduction to Metabolic Energy).

5. Under required courses, students can take either CHEM 2740 (Introduction to the Biochemistry Laboratory) or CHEM 2720 (Principles and Practices of the Modern Biochemistry Laboratory).

6. Under required courses, students can take either CHEM 2750/MBIO 2750 (Elements of Biochemistry 2) or CHEM 2710/MBIO 2710 (Biochemistry 2: Catabolism, Synthesis, and Information Pathways).

7. There are 15 credit hours of Free Electives required in the Food Industry Option. If both SOC 1000 and BIOL 1410 are taken, then there are 15 credit hours of Free Electives required. If one of the 6 credit hours options are taken (PSYC 1200 *or* BIOL 1020 and BIOL 1030) then there are 12 credit hours required. If both BIOL 1020 and BIOL 1030 with PSYC 1200 are taken, there are 9 credit hours of Free Electives required.

Students may apply for the Cooperative Education Program. Two work terms are required to graduate with Co-op designation. Co-op courses (3 credit hours each) are used towards Free Electives.

8. Students must choose 15 credit hours (5 courses) from one of the following concentrations (A, B or C). Students are required to ensure prerequisites will be met for the courses in their selected concentration. Prerequisites for concentration courses may result in additional courses or free electives needed:

A. Quality Assurance Concentration		15
FOOD 4160	Food Analysis 1	
FOOD 4250	Food Analysis 2	
FOOD 4500	Food Safety and Regulations	
HNSC 4270*	Sensory Evaluation of Food	
STAT 3000	Applied Linear Statistical Models	
STAT 3170	Statistical Quality Control	
B. Food Product Development Concentration		15
FOOD 4160	Food Analysis 1	
FOOD 4250	Food Analysis 2	
FOOD 4500	Food Safety and Regulations	
FOOD 3160*	Frozen Dairy Products	
or FOOD 3170*	or Cheese and Fermented Milk Products	
or FOOD 3200	or Baking Science and Technology	
HNSC 4270*	Sensory Evaluation of Food	
HNSC 4290	Food, Nutrition and Health Policies	
HNSC 4540	Functional Foods and Nutraceuticals	
STAT 3000	Applied Linear Statistical Models	
C. Food Industry Management Concentration		15
ACC 1100	Introductory Financial Accounting	
GMGT 2060	Management and Organization Theory	
GMGT 3010	Management Decision-Making	
HNSC 3342	Management for Food and Nutrition Professionals	
HRIR 2440	Human Resource Management	
MKT 3220	Marketing Research	
GMGT	3000 level	

*This course is usually offered every 2nd year - planning ahead is important.