UM | Faculty of Agricultural and Food Sciences

Effective September 2026

B.Sc. Human Nutritional Sciences (Foods Option)

High school courses required as prerequisites to required degree courses include:

- Math 40S (Applied or Pre-Cal with 50% or higher)
- Chemistry 40S (50% or higher)
- Biology 40S (50% or higher **only** if taking BIOL 1020 – not required for BIOL 1410)

*Upgrading options available – please contact aginfo@umanitoba.ca for more information.

Course prerequisites require a final grade of C or higher. For example, a C in CHEM 2370, HNSC 1200 and HNSC 1210 is required to take HNSC 2140. Prerequisites are enforced. Deviating from the recommend progression and failure to secure the required prerequisites may result in a delay in program and prolong graduation.

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 Electives[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 2160	Principles of 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
FOOD 2500 *(or former HNSC 2150)*	Food Chemistry *(students with HNSC 2150 completed, may use it for FOOD 2500)*	3

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

HEAL 2600	Integration of Health Determinants of Individuals	3
Total credit hours		30

Year 3

Course No.	Course Name	Credit Hours
FOOD 4200	Quality Control in Foods	3
HNSC 3350	Culture and Food Patterns	3
HNSC 3330	Ingredient Technology for Food Design	3
FOOD 4150	Food Microbiology 1	3
HEAL 3000	Introduction to Social Epidemiology	3
MKT 2210	Fundamentals of Marketing	3
Program 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 4270	Sensory Evaluation of Food	3
HNSC 4280	Food Product Development	3
HNSC 4290	Food, Nutrition and Health Policies	3
Program Elective[8]		3
Free Electives[7]		12
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 24 to 21. 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 24 credit hours of Free Electives required in the Food Option. If both SOC 1000 and BIOL 1410 are taken, then there are 24 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 21 credit hours required. If both BIOL 1020 and BIOL 1030 with PSYC 1200 are taken, there are 18 credit hours of Free Electives required.
Students may apply for the Cooperative Education Program. Three work terms are required to graduate with Co-op designation. Co-op courses (3 credit hours each) are used towards Free Electives.

8. **Program Electives** – 9 credit hours of courses can be from either the Asper School of Business (any level), OR any 3000 or 4000 level FOOD (Food Science) courses (note some FOOD courses are co-taught with HNSC courses). Students must have the correct pre-requisites for the Program Elective and need to plan accordingly.