# University of Pretoria Yearbook 2016

# BScHons Food Science (03240921)

| | |
|---|---|
| **Duration of study** | 1 year |
| **Total credits** | 160 |

## Programme information

**Renewal of registration**

i. Subject to exceptions approved by the Dean, on the recommendation of the head of department, and in the case of distance education where the Dean formulates the stipulations that will apply, a student may not sit for an examination for the honours degree more than twice in the same module.
ii. A student for an honours degree must complete his or her study, in the case of full-time students, within two years and, in the case of after-hours students, within three years of first registering for the degree and, in the case of distance education students, within the period stipulated by the Dean. Under special circumstances, the Dean, on the recommendation of the head of department, may give approval for a limited extension of this period.

In calculating marks, General Regulation G.12.2 applies.

Apart from the prescribed coursework, a research project is an integral part of the study.

## Admission requirements

A BSc in Food Science degree with a pass mark of at least 60%. A candidate with another, applicable academic background can be admitted to the programme on passing a preliminary examination and/or on completion of certain prescribed modules aimed at supplementing lacking background knowledge.

## Other programme-specific information

Each candidate must complete elective modules to a total of 30 credits. We strongly recommend the following two modules as electives, or other modules as approved by the head of department:

FST 701 Animal food technologies 701

FST 702 Advanced plant food science and technologies 702

## Pass with distinction

The BScHons degree is awarded with distinction to a candidate who obtains a weighted average of at least 75% in all the prescribed modules and a minimum of 65% in any one module.

# Curriculum: Final year

**Minimum credits: 135**

## Core modules

### Research methodology and seminars 700 (FST 700)

| | |
|---|---|
| **Module credits** | 15.00 |
| **Prerequisites** | No prerequisites. |
| **Contact time** | 1 day seminar in semester 2, 1 workshop of 5 days in semester 1 |
| **Language of tuition** | English |
| **Academic organisation** | Food Science |
| **Period of presentation** | Year |

**Module content**

Lectures and assignments: Research methodology. Literature study and seminar presentations on topics in Food Science and/or Technology. The candidate must also pass an oral examination at the end of the module.

### Sensory evaluation 712 (FST 712)

| | |
|---|---|
| **Module credits** | 10.00 |
| **Prerequisites** | No prerequisites. |
| **Contact time** | 6 practicals per semester, 12 discussion classes |
| **Language of tuition** | English |
| **Academic organisation** | Food Science |
| **Period of presentation** | Semester 1 |

**Module content**

Lectures: principles and applications of sensory evaluation. Types of panels, tests and test conditions and their functions. Selection and training of panellists for descriptive sensory evaluation. Instrumental sensory quality measurements. Statistical analysis and interpretation of data. Practicals: Practical aspects and execution of sensory evaluation techniques, analysis and interpretation of data. Instrumental sensory quality measurements.

### Production development and quality management 713 (FST 713)

| | |
|---|---|
| **Module credits** | 25.00 |
| **Prerequisites** | No prerequisites. |
| **Contact time** | 15 discussion classes, 6 practicals per semester |
| **Language of tuition** | English |
| **Academic organisation** | Food Science |
| **Period of presentation** | Semester 1 |

**Module content**
Lectures: principles involved and steps that are followed to develop new food products that are safe, tasty, nutritious and cost effective. Application of the theory of food product development. Quality management systems with specific reference to Good Manufacturing Practices, HACCP and ISO 9000. National and international standards, Codex Alimentarius, FDA. Application of food legislation. Food packaging.
Practicals: A product development project will be planned, conducted and presented. Application and implementation of HACCP.

### Advanced food science 720 (FST 720)

| | |
|---|---|
| **Module credits** | 15.00 |
| **Prerequisites** | No prerequisites. |
| **Contact time** | 12 discussion classes |
| **Language of tuition** | English |
| **Academic organisation** | Food Science |
| **Period of presentation** | Year |

**Module content**
Discussion classes in advanced level food chemistry, food microbiology, food engineering, food processing and nutrition. Problem solving and literature discussion.

### Research project 763 (FST 763)

| | |
|---|---|
| **Module credits** | 40.00 |
| **Prerequisites** | No prerequisites. |
| **Language of tuition** | English |
| **Academic organisation** | Food Science |
| **Period of presentation** | Year |

**Module content**
A short research project on an approved topic in food science and/or technology is planned, executed and presented in the form of a written report.

## Elective modules

### Animal food technologies 701 (FST 701)

| | |
|---|---|
| **Module credits** | 15.00 |
| **Prerequisites** | No prerequisites. |
| **Contact time** | 9 practicals, 30 discussion classes |
| **Language of tuition** | English |
| **Academic organisation** | Food Science |
| **Period of presentation** | Year |

**Module content**

Dairy technology: The technology of fluid, concentrated, dried, frozen and fermented dairy products and starter cultures. Requirements for milk supply and other ingredients. Principles for the manufacturing of products in this category. Possible defects, causes and prevention.
Practical work: Preparation of condensed milk, custard, ready-to-eat milk-based desserts, flavoured milk beverages, dairy-fruit juice mixtures; ice cream and other frozen desserts; yoghurt and cultured milk products; cheeses. Evaluation and analysis of the products. Effect of processing on the nutritional value of dairy products. Factory visits.
Meat, poultry, fish and egg technology: Meat, poultry, fish and egg processing and equipment. Meat emulsion, curing, dehydration and fermentation technology. Preservation and storage. Packaging. Legislation. Quality control and hygiene. Effect of processing on the nutritional value of meat products.
Practical work: Manufacturing of dried, cured, fermented and emulsion type products. Visits to processing factories.

## Advanced plant food science and technologies 702 (FST 702)

| | |
|---|---|
| **Module credits** | 15.00 |
| **Prerequisites** | No prerequisites. |
| **Contact time** | 3 practicals S2, 8 discussion classes in semester 1, 5 discussion classes in semester 2, 5 practicals S1 |
| **Language of tuition** | English |
| **Academic organisation** | Food Science |
| **Period of presentation** | Year |

**Module content**

Plant food functionality:  Starch, non-starch polysaccharides, protein.  Advanced rheology and texture.  Malting and brewing.  Ready-to-eat (RTE) technologies and their impact on functional and nutritional quality.  Plant oil processing.  Minimal processing of fruits and vegetables.  Practical work:  Pasting properties of starch; Dough rheology; Isolation of legume and cereal proteins;  SDS-PAGE electrophoreses of legume and cereal proteins; Malting and mashing of sorghum and barley male; Extraction of essential oils; Extraction and identification of phenolic compounds; Minimal processing of fruit and vegetables.