University of Pretoria Yearbook 2022

BSc (Culinary Science) (02133320)

Department	Consumer and Food Sciences
Minimum duration of study	4 years
Total credits	560
NQF level	08

Admission requirements

Important information for all prospective students for 2022

- The admission requirements apply to students who apply for admission to the University of Pretoria with a **National Senior Certificate (NSC) and Independent Examination Board (IEB) qualifications.**
- **Applicants with qualifications other than the abovementioned** should refer to:
  - **Brochure:** Undergraduate Programme Information 2022: Qualifications other than the NSC and IEB, available at click here.
- **Citizens from countries other than South Africa (applicants who are not South African citizens)** should also refer to:
  - **Brochure:** Newcomer's Guide 2021, available at click here.
  - **Website:** click here.
- **School of Tomorrow (SOT), Accelerated Christian Education (ACE) and General Education Development Test (GED):** The University of Pretoria no longer accepts qualifications awarded by these institutions.
- **National Certificate (Vocational) (NCV) Level 4:** The University of Pretoria may consider NCV candidates, provided they meet the exemption for bachelor's status criteria and the programme requirements.

Transferring students

A transferring student is a student who, at the time of application for a degree programme at the University of Pretoria (UP) –

- is a registered student at another tertiary institution, **or** was previously registered at another tertiary institution and did not complete the programme enrolled for at that institution, and is not currently enrolled at a tertiary institution, **or** has completed studies at another tertiary institution, but is not currently enrolled at a tertiary institution, **or** has started with tertiary studies at UP, then moved to another tertiary institution and wants to be readmitted at UP.

A transferring student will be considered for admission based on

- an NSC or equivalent qualification with exemption to bachelor's or diploma studies (whichever is applicable); **and** meeting the minimum faculty-specific subject requirements at NSC or tertiary level; **or** having completed a higher certificate at a tertiary institution with faculty-specific subjects/modules passed (equal to or more than 50%), as well as complying with faculty rules on admission;
- previous academic performance (must have passed all modules registered for up to the closing date of

application) or as per faculty regulation/promotion requirements;
- a certificate of good conduct.

Note: Students who have been dismissed at the previous institution due to poor academic performance, will not be considered for admission to UP.

Returning students

A returning student is a student who, at the time of application for a degree programme –

- is a registered student at UP, and wants to transfer to another degree at UP, **or** was previously registered at UP and did not complete the programme enrolled for, and did not enrol at another tertiary institution in the meantime (including students who applied for leave of absence), **or** has completed studies at UP, but is not currently enrolled or was not enrolled at another tertiary institution after graduation.

A returning student will be considered for admission based on

- an NSC or equivalent qualification with exemption to bachelor's or diploma studies (whichever is applicable); **and** meeting the minimum faculty-specific subject requirements at NSC or tertiary level; **or** previous academic performance (should have a cumulative weighted average of at least 50% for the programme enrolled for);
- having applied for and was granted leave of absence.

Note: Students who have been excluded/dismissed from a faculty due to poor academic performance may be considered for admission to another programme at UP. The Admissions Committee may consider such students if they were not dismissed more than twice. Only ONE transfer between UP faculties will be allowed, and a maximum of two (2) transfers within a faculty.

Important faculty-specific information on undergraduate programmes for 2022

- The closing date is an administrative admission guideline for non-selection programmes. Once a non-selection programme is full and has reached the institutional targets, then that programme will be closed for further admissions, irrespective of the closing date. However, if the institutional targets have not been met by the closing date, then that programme will remain open for admissions until the institutional targets are met.
- The following persons will be considered for admission: Candidates who have a certificate that is deemed by the University to be equivalent to the required National Senior Certificate (NSC) with university endorsement; candidates who are graduates from another tertiary institution or have been granted the status of a graduate of such an institution, and candidates who are graduates of another faculty at the University of Pretoria.
- Life Orientation is excluded when calculating the Admission Point Score (APS).
- Grade 11 results are used for the conditional admission of prospective students. Final admission is based on the final NSC/IEB results.

University of Pretoria website: click here

Minimum requirements			
Achievement level			
English Home Language or English First Additional Language	**Mathematics**	**Physical Sciences**	**APS**
NSC/IEB	NSC/IEB	NSC/IEB	
5	5	5	**32**

Candidates who do not comply with the minimum admission requirements for BSc (Culinary Science), may be considered for admission to the BSc – Extended programme – Biological and Agricultural Sciences, which requires an additional year of study. Students who are placed in the BSc – Extended programme – Biological and

Agricultural Sciences will take a minimum of five years to complete the BSc (Culinary Science) programme.

BSc – Extended Programme – Biological and Agricultural Sciences

Minimum requirements			
Achievement level			
English Home Language or English First Additional Language	**Mathematics**	**Physical Sciences**	**APS**
NSC/IEB	NSC/IEB	NSC/IEB	
4	4	4	**26**

Note:

*The BSc – Extended programmes are not available for students who meet all the requirements for the corresponding mainstream programme.

*Please note that only students who apply in their final NSC or equivalent qualification year will be considered for admission into any of the BSc – Extended programmes.

Other programme-specific information

1.1 Requirements for specific modules

A candidate who:

a. does not qualify for STK 110, must enrol for STK 113 and STK 123;
b. egisters for Mathematical Statistics (WST) and Statistics (STK) modules must take note that WST and STK modules, except for STK 281, may not be taken simultaneously in a programme; a student must take one and only one of the following options:

- WST 111, WST 121, WST 212, WST 211, WST 221, WST 311, WST 312, WST 322, WST 321, and STK 353

  or

- WST 111, WST 121, WST 212, WST 211, WST 221, WST 311, WST 312, WST 322, STK320, STK353.

  or

- STK 110, STC 122, STK 210, STK 220, WST 212, STK 310, STK 320, STK 353.

c. registers for a module presented by another faculty must take note of the timetable clashes, prerequisites for that module, subminimum required in examination papers, supplementary examinations, etc.

1.2 Fundamental modules

a. It is compulsory for all new first-year students to satisfactorily complete the Academic orientation (UPO 102) and to take Academic information management modules (AIM 111 and AIM 121) and Language and study skills (LST 110). Please see curricula for details.
b. Students who intend to apply for admission to MBChB or BChD in the second semester, when places become available in those programmes, may be permitted to register for up to 80 module credits and 4 core modules in the first semester during the first year provided that they obtained a final mark of no less than 70% for Grade 12 Mathematics and achieved an APS of 34 or more in the NSC.

Promotion to next study year

A student will be promoted to the following year of study if he or she passed 100 credits of the prescribed credits for a year of study, unless the Dean on the recommendation of the relevant head of department decides otherwise. A student who does not comply with the requirements for promotion to the following year of study, retains the credit for the modules already passed and may be admitted by the Dean, on recommendation of the relevant head of department, to modules of the following year of study to a maximum of 48 credits, provided that it will fit in with both the lecture and examination timetable.

General promotion requirements in the faculty
All students whose academic progress is not acceptable can be suspended from further studies.

- A student who is excluded from further studies in terms of the stipulations of the abovementioned regulations, will be notified in writing by the Dean or Admissions Committee at the end of the relevant semester.
- A student who has been excluded from further studies may apply in writing to the Admissions Committee of the Faculty of Natural and Agricultural Sciences for re-admission.
- Should the student be re-admitted by the Admissions Committee, strict conditions will be set which the student must comply with in order to proceed with his/her studies.
- Should the student not be re-admitted to further studies by the Admissions Committee, he/she will be informed in writing.
- Students who are not re-admitted by the Admissions Committee have the right to appeal to the Senate Appeals Committee.
- Any decision taken by the Senate Appeals Committee is final.

Practical/clinical/internship information

OPI 400 (Experiential training in industry): During the first to fourth years of study, students must complete a total of 480 hours experiential training in the industry to develop practical and occupational skills, participate in community engagement and provide service learning. This is equal to 3 weeks x 40 hours (120 hours) per year, according to requirements as determine by the head of department. These “credits” include evidence of experiential training, service learning and community engagement during the four years of the study programme and must be successfully completed together with a complete portfolio before the degree will be conferred.
Please note: Various practical and industry interaction activities support the theoretical component of VDS 414 & VDS 424, VDS 413 and FST 413 and take place after hours to develop practical and industry skills.

Curriculum: Year 1

Minimum credits: 136

Fundamental = 14 credits
Core = 122 credits

Fundamental modules

Academic information management 111 (AIM 111)

Module credits	4.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Humanities Faculty of Law Faculty of Health Sciences Faculty of Natural and Agricultural Sciences Faculty of Theology and Religion
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Information Science
Period of presentation	Semester 1

Module content

Find, evaluate, process, manage and present information resources for academic purposes using appropriate technology.

Academic information management 121 (AIM 121)

Module credits	4.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Economic and Management Sciences Faculty of Humanities Faculty of Law Faculty of Health Sciences Faculty of Natural and Agricultural Sciences Faculty of Theology and Religion Faculty of Veterinary Science
Prerequisites	No prerequisites.
Contact time	2 lectures per week

Language of tuition	Module is presented in English
Department	Informatics
Period of presentation	Semester 2

Module content

Apply effective search strategies in different technological environments. Demonstrate the ethical and fair use of information resources. Integrate 21st-century communications into the management of academic information.

Language and study skills 110 (LST 110)

Module credits	6.00
NQF Level	05
Service modules	Faculty of Natural and Agricultural Sciences Faculty of Veterinary Science
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Unit for Academic Literacy
Period of presentation	Semester 1

Module content

The module aims to equip students with the ability to cope with the reading and writing demands of scientific disciplines.

Academic orientation 102 (UPO 102)

Module credits	0.00
NQF Level	00
Language of tuition	Module is presented in English
Department	Natural and Agricultural Sciences Deans Office
Period of presentation	Year

Core modules

Marketing management 120 (BEM 120)

Module credits	10.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Contact time	3 lectures per week

Language of tuition	Module is presented in English
Department	Marketing Management
Period of presentation	Semester 2

Module content

This module provides an overview of the fundamentals of marketing by considering the exchange process, customer value, marketing research and the development of a marketing plan. It also addresses the marketing mix elements with specific focus on the seven service marketing elements namely the service product, physical evidence, people, process, distribution, pricing and integrated marketing communication.

Biometry 120 (BME 120)

Module credits	16.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Natural and Agricultural Sciences Faculty of Veterinary Science
Prerequisites	At least 4 (50-59%) in Mathematics in the Grade 12 examination, or at least 50% in both Statistics 113, 123
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Statistics
Period of presentation	Semester 2

Module content

Simple statistical analysis: Data collection and analysis: Samples, tabulation, graphical representation, describing location, spread and skewness. Introductory probability and distribution theory. Sampling distributions and the central limit theorem. Statistical inference: Basic principles, estimation and testing in the one- and two-sample cases (parametric and non-parametric). Introduction to experimental design. One- and twoway designs, randomised blocks. Multiple statistical analysis: Bivariate data sets: Curve fitting (linear and non-linear), growth curves. Statistical inference in the simple regression case. Categorical analysis: Testing goodness of fit and contingency tables. Multiple regression and correlation: Fitting and testing of models. Residual analysis. Computer literacy: Use of computer packages in data analysis and report writing.

General chemistry 117 (CMY 117)

Module credits	16.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Health Sciences Faculty of Veterinary Science
Prerequisites	A candidate must have Mathematics for at least 60% and 60% for Physical Sciences.

Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Chemistry
Period of presentation	Semester 1

Module content

General introduction to inorganic, analytical and physical chemistry. Atomic structure and periodicity. Molecular structure and chemical bonding using the VSEOR model. Nomenclature of inorganic ions and compounds. Classification of reactions: precipitation, acid-base, redox reactions and gas-forming reactions. Mole concept and stoichiometric calculations concerning chemical formulas and chemical reactions. Principles of reactivity: energy and chemical reactions. Physical behaviour gases, liquids, solids and solutions and the role of intermolecular forces. Rate of reactions: Introduction to chemical kinetics.

General chemistry 127 (CMY 127)

Module credits	16.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Health Sciences Faculty of Veterinary Science
Prerequisites	Natural and Agricultural Sciences students: CMY 117 GS or CMY 154 GS Health Sciences students: none
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Chemistry
Period of presentation	Semester 2

Module content

Theory: General physical-analytical chemistry: Chemical equilibrium, acids and bases, buffers, solubility equilibrium, entropy and free energy, electrochemistry. Organic chemistry: Structure (bonding), nomenclature, isomerism, introductory stereochemistry, introduction to chemical reactions and chemical properties of organic compounds and biological compounds, i.e. carbohydrates and aminoacids. Practical: Molecular structure (model building), synthesis and properties of simple organic compounds.

Physiology 110 (FSG 110)

Module credits	6.00
NQF Level	05
Service modules	Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	No prerequisites.
Contact time	3 lectures per week

Language of tuition	Module is presented in English
Department	Physiology
Period of presentation	Semester 1

Module content

Introduction (terminology and anatomical orientation); chemical principles; cytology and histology; neuro-physiology and the senses; haematology and body fluids; cardiovascular system.

Physiology 120 (FSG 120)

Module credits	6.00
NQF Level	05
Service modules	Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	FSG 110
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Physiology
Period of presentation	Semester 2

Module content

Respiratory system; nutrition; digestion and metabolism; kidneys and acid-base equilibrium; endocrinology; reproduction physiology and reproduction; skin and body temperatures.

Introduction to microbiology 161 (MBY 161)

Module credits	8.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	No prerequisites.
Contact time	2 lectures per week, fortnightly tutorials
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 2

Module content

The module will introduce the student to the field of Microbiology. Basic Microbiological aspects that will be covered include introduction into the diversity of the microbial world (bacteria, archaea, eukaryotic microorganisms and viruses), basic principles of cell structure and function, microbial nutrition and microbial growth and growth control. Applications in Microbiology will be illustrated by specific examples i.e. bioremediation, animal-microbial symbiosis, plant-microbial symbiosis and the use of microorganisms in industrial microbiology. Wastewater treatment, microbial diseases and food will be introduced using specific examples.

Molecular and cell biology 111 (MLB 111)

Module credits	16.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Health Sciences Faculty of Veterinary Science
Prerequisites	A candidate who has passed Mathematics with at least 60% in the Grade 12 examination
Contact time	1 practical/tutorial per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 1

Module content

Introduction to the molecular structure and function of the cell. Basic chemistry of the cell. Structure and composition of prokaryotic and eukaryotic cells. Ultrastructure and function of cellular organelles, membranes and the cytoskeleton. General principles of energy, enzymes and cell metabolism. Selected processes, e.g. glycolysis, respiration and/or photosynthesis. Introduction to molecular genetics: DNA structure and replication, transcription, translation. Cell growth and cell division.

Basic food preparation 111 (VDS 111)

Module credits	6.00
NQF Level	05
Service modules	Faculty of Health Sciences
Prerequisites	No prerequisites.
Contact time	0.5 practical per week, 1 discussion class per week, 1 lecture per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content
Module 1: Basic food preparation and food preparation techniques. Mise en place, weighing and measurement techniques, equipment and terminology as applied in food preparation. History of the foodservice industry and contemporary chefs. Basic food quality control.
Module 2: Food preparation basics of the following: stocks, soups and sauces

Basic food preparation 121 (VDS 121)

Module credits	6.00
NQF Level	05
Service modules	Faculty of Health Sciences
Prerequisites	VDS 111
Contact time	1 lecture per week, 1 practical per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content
Module 1: Principles and practices of food preparation and cooking techniques. Mise en place, weighing and measurement techniques, equipment and terminology as applied in food preparation. Basic food quality control.
Module 2: Food preparation basics of the following: starches and cereals

Mathematics 134 (WTW 134)

Module credits	16.00
NQF Level	05
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Education Faculty of Veterinary Science
Prerequisites	50% for Mathematics in Grade 12
Contact time	1 tutorial per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Mathematics and Applied Mathematics
Period of presentation	Semester 1

Module content

**Students will not be credited for more than one of the following modules for their degree: WTW 134, WTW 165, WTW 114, WTW 158. WTW 134 does not lead to admission to Mathematics at 200 level and is intended for students who require Mathematics at 100 level only. WTW 134 is offered as WTW 165 in the second semester only to students who have applied in the first semester of the current year for the approximately 65 MBChB, or the 5-6 BChD places becoming available in the second semester and who were therefore enrolled for MGW 112 in the first semester of the current year.*
Functions, derivatives, interpretation of the derivative, rules of differentiation, applications of differentiation, integration, interpretation of the definite integral, applications of integration. Matrices, solutions of systems of equations. All topics are studied in the context of applications.

Curriculum: Year 2

Minimum credits: 144

Core modules

Introduction to proteins and enzymes 251 (BCM 251)

Module credits	12.00
NQF Level	06
Service modules	Faculty of Health Sciences
Prerequisites	CMY 117 GS and CMY 127 GS and MLB 111 GS
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 1

Module content

Structural and ionic properties of amino acids. Peptides, the peptide bond, primary, secondary, tertiary and quaternary structure of proteins. Interactions that stabilise protein structure, denaturation and renaturation of proteins. Introduction to methods for the purification of proteins, amino acid composition, and sequence determinations. Enzyme kinetics and enzyme inhibition. Allosteric enzymes, regulation of enzyme activity, active centres and mechanisms of enzyme catalysis. Examples of industrial applications of enzymes and in clinical pathology as biomarkers of diseases. Online activities include introduction to practical laboratory techniques and Good Laboratory Practice; techniques for the quantitative and qualitative analysis of biological molecules; enzyme activity measurements; processing and presentation of scientific data.

Carbohydrate metabolism 252 (BCM 252)

Module credits	12.00
NQF Level	06
Service modules	Faculty of Education Faculty of Health Sciences
Prerequisites	BCM 251 GS and BCM 257 GS.
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 2

Module content

Carbohydrate structure and function. Blood glucose measurement in the diagnosis and treatment of diabetes. Bioenergetics and biochemical reaction types. Glycolysis, gluconeogenesis, glycogen metabolism, pentose phosphate pathway, citric acid cycle and electron transport. Total ATP yield from the complete oxidation of glucose. A comparison of cellular respiration and photosynthesis. Online activities include techniques for the study and analysis of metabolic pathways and enzymes; PO ratio of mitochondria, electrophoresis, extraction, solubility and gel permeation techniques; scientific method and design.

Introductory biochemistry 257 (BCM 257)

Module credits	12.00
NQF Level	06
Prerequisites	CMY 117 GS and CMY 127 GS and MLB 111 GS
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 1

Module content

Chemical foundations. Weak interactions in aqueous systems. Ionisation of water, weak acids and weak bases. Buffering against pH changes in biological systems. Water as a reactant and function of water. Carbohydrate structure and function. Biochemistry of lipids and membrane structure. Nucleotides and nucleic acids. Other functions of nucleotides: energy carriers, components of enzyme cofactors and chemical messengers. Introduction to metabolism. Bioenergetics and biochemical reaction types. Online activities include introduction to laboratory safety and Good Laboratory Practice; basic biochemical calculations; experimental method design and scientific controls, processing and presentation of scientific data.

Lipid and nitrogen metabolism 261 (BCM 261)

Module credits	12.00
NQF Level	06
Service modules	Faculty of Health Sciences
Prerequisites	BCM 251 GS and BCM 257 GS.
Contact time	1 tutorial per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 2

Module content

Biochemistry of lipids, membrane structure, anabolism and catabolism of lipids. Total ATP yield from the complete catabolism of lipids. Electron transport chain and energy production through oxidative phosphorylation. Nitrogen metabolism, amino acid biosynthesis and catabolism. Biosynthesis of neurotransmitters, pigments, hormones and nucleotides from amino acids. Catabolism of purines and pyrimidines. Therapeutic agents directed against nucleotide metabolism. Examples of inborn errors of metabolism of nitrogen containing compounds. The urea cycle, nitrogen excretion. Online activities include training in scientific reading skills; evaluation of a scientific report; techniques for separation analysis and visualisation of biological molecules; hypothesis design and testing, method design and scientific controls.

Consumer behaviour 212 (BEM 212)

Module credits	16.00
NQF Level	07
Service modules	Faculty of Engineering, Built Environment and Information Technology Faculty of Humanities Faculty of Natural and Agricultural Sciences
Prerequisites	BEM 120 GS
Contact time	3 lectures per week
Language of tuition	Module is presented in English
Department	Marketing Management
Period of presentation	Semester 1

Module content

Internal and external influencing factors of consumer behaviour, the consumer's decision process and application fields of consumer behaviour, consumerisms and social responsibility, buying behaviour of consumers in both product and service related industries, consumer psychology and the influence thereof on buying behaviour, psychology of pricing, influencing factors in consumer buying behaviour, the impact of various forms of marketing communication on buying behaviour.

Principles of food processing and preservation 260 (FST 260)

Module credits	12.00
NQF Level	06
Prerequisites	CMY 117, CMY 127, MBY 161, PHY 131 and WTW 134 or WTW 165 or permission from the HOD.
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1 and Semester 2

Module content

Lectures: Food preservation technologies: concept of hurdle technology; heat (blanching, pasteurisation and sterilisation); cold (refrigeration and freezing); concentration and dehydration; food irradiation; fermentation; preservatives; new methods of food preservation. Effect of various food preservation technologies on the microbiological (shelf-life and safety issues), sensory and nutritional quality of foods. Practicals: Practical applications of above processes. Physical, chemical and sensory evaluation of processed foods. Assignment: Application of hurdle technology concept to a specific food product.

Bacteriology 251 (MBY 251)

Module credits	12.00
NQF Level	06
Service modules	Faculty of Engineering, Built Environment and Information Technology
Prerequisites	MBY 161 GS
Contact time	2 lectures per week, fortnightly practicals
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 1

Module content

Growth, replication and survival of bacteria, Energy sources, harvesting from light versus oxidation, regulation of catabolic pathways, chemotaxis. Nitrogen metabolism, iron-scavenging. Alternative electron acceptors: denitrification, sulphate reduction, methanogenesis. Bacterial evolution, systematic and genomics. Biodiversity; bacteria occurring in the natural environment (soil, water and air), associated with humans, animals, plants, and those of importance in foods and in the water industry.

Food microbiology 262 (MBY 262)

Module credits	12.00
NQF Level	06
Prerequisites	MBY 251 GS.
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Biochemistry, Genetics and Microbiology
Period of presentation	Semester 2

Module content

Primary sources of migroorganisims in food. Factors affecting the growth and survival of microorganisms in food. Microbial quality, spoilage and safety of food. Different organisms involved, their isolation, screening and detection. Conventional approaches, alternative methods rapid methods. Food fermentations: fermentation types, principles and organisms involved.

Consumer facilitation 222 (VBF 222)

Module credits	8.00
NQF Level	06
Prerequisites	No prerequisites.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content

Consumer decision-making (determinants of informed, responsible consumer decisions, the complexity of consumer decisions), consumer satisfaction, consumer socialisation (consumer education, development of consumer skills), consumerism (consumer protection) and consumer complaint behaviour. Gender issues in consumer decision-making, expenditure patterns of the diverse South African consumer market and globalisation. The UN sustainable development goals #5 and 12 are addressed in this module and all projects are focused on responsible consumption behaviour.

Food commodities and preparation 210 (VDS 210)

Module credits	18.00
NQF Level	06
Service modules	Faculty of Health Sciences
Prerequisites	VDS 121
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content

Module 1: The study of different food systems with regard to food preparation. Physical and chemical properties and the influence of the composition in food preparation.
Module 2: Food preparation basics of the following: soups and sauces, fruit and vegetables; salads; frozen desserts; gelatine.
Module 3: Origin and development of food habits; Factors influencing habits and choice; Dynamics of food habits.
Influence of religion on food habits. Food habits of different ethnic groups.
All modules encompass sustainable food preparation practices through the principles of waste management, including the utilising and minimization of food waste and portion control. Sustainability is addressed by the food practices of local ethnic cultures, the ingredients used by these cultures and how to utilise these ingredients and substituting ingredients with local alternatives.

Food commodities and preparation 221 (VDS 221)

Module credits	18.00
NQF Level	06
Service modules	Faculty of Health Sciences
Prerequisites	VDS 210
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content

Module 1: The study of different food systems with regard to food preparation. Physical and chemical properties and the influence of the composition in food preparation.
Module 2: Food preparation basics of the following: meat; poultry; fish, legumes, eggs and milk, baked products (whole spectrum); leavening agents.
Module 3: The influence of culture on cuisines. Study of the cuisines of selected African, European and Eastern countries.
All modules encompass sustainable food preparation practices through the principles of waste management, including the utilising and minimization of food waste and portion control. Sustainability is addressed by the food practices of local ethnic cultures, the ingredients used by these cultures and how to utilise these ingredients and substituting ingredients with local alternatives.

Curriculum: Year 3

Minimum credits: 140

Core modules

Food chemistry 351 (FST 351)

Module credits	18.00
NQF Level	07
Prerequisites	BCM 251 and BCM 252 and BCM 261 and BCM 257 or permission of the HOD.
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content

Lectures - Chemistry of major food components: Carbohydrates. Proteins. Lipids. Water. Chemical and nutritional aspects of food processing: implications of different processing techniques on the major food components. Functional properties of the major food components. Modification of functional properties of the major food components. Food analysis methodology. Practical work: Food analysis.

Food chemistry (2) 352 (FST 352)

Module credits	18.00
NQF Level	07
Prerequisites	BCM 251 and BCM 252 and BCM 261 and BCM 257 or permission from the HOD.
Contact time	1 practical per week, 2 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content

Lectures - Basic food analysis and chemistry of the minor food components: Basic food analysis, vitamins, minerals, additives, contaminants. Chemical and nutritional aspects of food processing: implications of different processing techniques on minor food components. Functional properties of the minor food components. Food analysis methodology. Practical work: Food analysis.

Food service management 321 (VDB 321)

Module credits	18.00
NQF Level	07
Service modules	Faculty of Health Sciences

Prerequisites	Natural and Agricultural Sciences students: VDS 322 #
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content

Planning and layout of food service units for different food service systems. Equipment for food services. Factors influencing the choice and purchasing of equipment for different food service units. Hygiene and safety in food services. management in food service systems. Financial management in food services.

Nutrition (Capita Selecta from HNT 210) 310 (VDG 310)

Module credits	17.00
NQF Level	07
Prerequisites	No prerequisites.
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content

The study of nutrients and water regarding their chemical composition, characteristics, basic digestion, absorption, metabolism, functions, food sources and symptoms of deficiency and toxicity. Energy metabolism. Dietary recommendations and guidelines, dietary guides and meal planning. The use and application of food composition tables in dietary analysis.

Nutrition (Capita Selecta from HNT 220) 320 (VDG 320)

Module credits	17.00
NQF Level	07
Prerequisites	No prerequisites.
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content

The role of nutrition in the life cycle: Prevention of lifestyle related diseases such as osteoporosis, cancer, coronary heart disease, tooth decay. Protein energy malnutrition and obesity.

Consumer food research 310 (VDS 310)

Module credits	21.00
NQF Level	07
Prerequisites	VDS 221
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content

Planning executing and reporting consumer food research. Food preservation and evaluation techniques. Experiments in food, emphasizing ingredient function and standard preparation methods. Application of experimental methods through which the chemical and physical reactions of food to different food handling, preparation and preservation techniques are illustrated. Quality evaluation and consumer orientated sensory evaluation of food products.

Large-scale food production and restaurant management 322 (VDS 322)

Module credits	31.00
NQF Level	07
Service modules	Faculty of Health Sciences
Prerequisites	VDS 210 and VDS 221
Contact time	3 lectures per week, 3 practicals per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content

Module 1: Restaurant management. Table setting, table serving, wine service, food and wine pairing, beverage management.
Module 2: Menu planning for different food service systems and styles of food service.
Module 3: Large scale food procurement, consumption and storage.
Practical work: Principles of large-scale food preparation and the practical application thereof in a practical restaurant situation. Recipe formats and adjustment applicable to large-scale food preparation. Work scheduling and the practical exposure to the use of large scale catering equipment in a real life situation.
The UN sustainable development goals #3; 8; 9; 11 and 12 are addressed during the theory components and practical sessions. Projects are focused on identifying not only critical areas of concern but also possible mitigating strategies thus encouraging initiatives to achieve good health and well-being, responsible industry consumption, production community engagement and economic growth.

Curriculum: Final year

Minimum credits: 140

Additional information:
OPI 400 (Experiential training in industry): During the first to fourth years of study, students must complete a total of 480 hours experiential training in the industry to develop practical and occupational skills, participate in community engagement and provide service learning. This is equal to 3 weeks x 40 hours (120 hours) per year, according to requirements as determine by the head of department. These “credits” include evidence of experiential training, service learning and community engagement during the four years of the study programme and must be successfully completed together with a complete portfolio before the degree will be conferred. Please note: Various practical and industry interaction activities support the theoretical component of VDS 414 & VDS 424, VDS 413 and FST 413 and take place after hours to develop practical and industry skills.

Core modules

Sensory evaluation 412 (FST 412)

Module credits	10.00
NQF Level	08
Prerequisites	FST 260, FST 351 and FST 352 or permission from the HOD.
Contact time	12 discussion classes, 6 practicals per semester
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content

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.

Experiential training in industry 400 (OPI 400)

Module credits	5.00
NQF Level	08
Prerequisites	Documentation of work experience as required for years 1-3
Contact time	1 practical per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content

During the first to fourth years of study students must complete a total of 600 hours experiential training in the industry to develop practical and occupational skills, participate in community engagement and provide service learning. This is equal to 3 weeks x40 hours (120 hours) per year for the first to third year and 6 weeks x 40 hours in the fourth year, including the following:

- event management for Hospitality Management students, according to requirements as determined by the head of department;

or

- a culinary science project application for Culinary Science students, according to requirements as determined by the head of department.

These 'credits' comprise 50 learning hours and the balance of the hours include work-related experience evidence of experiential training, service learning and community engagement during the four years of the degree programme and must be successfully completed together with a complete portfolio before the degree will be conferred.

Please note: Various practical and industry-interaction activities support the theoretical component of VDS 322, 413, 414, 417, 424, 427 and FST 412 (as applicable to the respective Consumer Science programmes) and take place after hours to develop practical and industry skills.

Research project 400 (VBR 400)

Module credits	30.00
NQF Level	08
Prerequisites	BEM 314 and Final-year status
Contact time	1 lecture per week, 1 practical per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Year

Module content

Research methodology. Plan, execute and report research project in clothing retail management, food retail management, hospitality management or culinary science.

Food service management 420 (VDB 420)

Module credits	21.00
NQF Level	08
Prerequisites	VDB 321 GS and ABV 320
Contact time	1 practical per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content

The professional food service manager's roles, responsibilities and characteristics. Contemporary leadership and management styles in food service systems. Professionalism and ethics. Advanced food service systems and production management techniques and training facilitation. Marketing of food services.
All lectures and practical discussion sessions focus on the role of food service management in addressing the UN Sustainable Development Goal #12 to promote sustainable consumption and production patterns. The practical components of presenting a workshop and setting up a small business encourages innovation and entrepreneurial growth and sustainability, thereby addressing the UN Sustainable Development Goal #8 to promote full and productive employment and economic growth.

Recipe development and standardisation 413 (VDS 413)

Module credits	30.00
NQF Level	08
Prerequisites	VDS 310 or VDS 322
Contact time	2 practicals per week, 3 lectures per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content

Recipe development process. Development of appropriate recipes and food products for a given situation. Standardisation of recipes. Food styling and food photography.
The UN sustainable development goals #3; 8; 9; 11 and 12 are addressed during the theory components and practical sessions. Projects are focused on identifying not only critical areas of concern but also possible mitigating strategies thus encouraging innovation to achieve good health and well-being, responsible industry consumption, production community engagement and economic growth.

Culinary art 414 (VDS 414)

Module credits	22.00
NQF Level	08
Prerequisites	VDS 322
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 1

Module content

Advanced food preparation and presentation techniques. Event planning and banqueting for Hospitality Management students and a culinary science project application for Culinary Science students

Culinary art 424 (VDS 424)

Module credits	22.00
NQF Level	08
Prerequisites	VDS 414
Contact time	2 lectures per week, 2 practicals per week
Language of tuition	Module is presented in English
Department	Consumer and Food Sciences
Period of presentation	Semester 2

Module content

Advanced food preparation and presentation techniques. Event planning and banqueting for Hospitality Management students and a culinary science project application for Culinary Science students.