

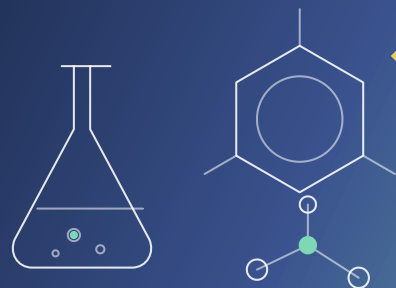
Module code

SPC-3410

Type of module

Undergraduate: Chemistry – Elective

Food Chemistry and Chemical Analysis of Food



Modular credits

2

Total student
engagement

28 hours

Prerequisite

SPC-1203
Fundamentals of
Physical and
Spectroscopic
Chemistry

Anti-requisite

None

Aims

To provide students with knowledge of the chemical composition, reactions, analysis, and processing of foods, and their applications in the food industry.

Module learning outcomes (MLO)

On successful completion of this module, a student will be expected to be able to:

MLO 1

Analyse the chemical composition, reactions, and functional properties of major food components.

MLO 2

Apply food chemistry principles to assess nutritional value, processing, and quality attributes.

MLO 3

Analyse and interpret food samples using appropriate analytical methods to ensure safety and compliance.

Module contents

Food Components:
Carbohydrates, proteins, lipids,
vitamins, minerals, and water

Nutrition: Food pyramid,
digestion, nutrient stability,
bioavailability, diet-related
diseases

Food Composition: Labelling,
composition tables, energy,
additives, and their functions

Food Analysis: Analytical steps,
methods, validation, and official
quality standards

Proximate Analysis: Moisture,
ash, fat, protein, fibre, and
nitrogen-free extract

Fats and Oils: Refractive index,
melting point, iodine,
saponification, oxidation

Nutrient Analysis:
Carbohydrates, minerals,
vitamins via titrimetry,
spectroscopy, chromatography,
HPLC

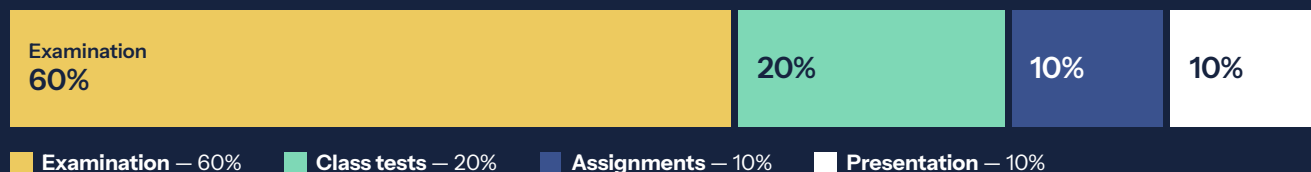
Assessment

60%

Examination

40%

Coursework



Formative assessment

Weekly discussion
and feedback

Summative assessment

COMPONENT		WEIGHTING
Examination		60%
Coursework		40%
Individual		30%
Class tests		20%
Assignments		10%
Group		10%
Presentation		10%

Graduate attributes and skills

Programme learning objectives (PLO) addressed

1	PLO 1 (Fundamental Knowledge in Chemistry)	3	PLO 3 (Critical Thinking and Problem-Solving Skills)
4	PLO 4 (Communication and Collaborative Skills)	6	PLO 6 (Digital Literacy and Lifelong Learning Skills)

Sustainability concept addressed

3	SDG 3 Good Health and Well-Being
12	SDG 12 Responsible Consumption and Production

Digital skills/software used (not limited to)

- Word processing software (e.g. Microsoft Word)
- Spreadsheet tools (e.g. Excel)
- Analytical data software (e.g. chromatography/spectroscopy software, statistical tools)

Micro-credentialling option

No

Stackable towards GenBESTARI Undergraduate Degree Programme or other relevant Lifelong Learning Programmes

No

Document details

Office **ODVCE** Document date **27 June 2026** Status **New** Approval **GBF (12/02/2026)**