Functional Foods (I002717)

Course size *(nominal values; actual values may depend on programme)*

Credits 5.0   **Study time** 150 h

Course offerings and teaching methods in academic year 2024-2025

A (semester 2)	English	Gent	independent work
			seminar
			lecture

Lecturers in academic year 2024-2025

| Van Camp, John | LA23 | lecturer-in-charge |

Offered in the following programmes in 2024-2025	crdts	offering
Master of Science in Biology	5	A
Master of Science in Bioscience Engineering: Food Science and Nutrition	5	A
Master of Science in Bioscience Engineering Technology: Food Industry	5	A
Master of Science in Food Technology	5	A
Master of Science in Nutrition and Food Systems	5	A
Exchange Programme in Bioscience Engineering: Cell and Gene Biotechnology (master's level)	5	A
Exchange Programme in Bioscience Engineering: Chemistry and Bioprocess Technology (master's level)	5	A
Exchange Programme in Bioscience Engineering: Food Science and Nutrition (master's level)	5	A

Teaching languages

English

Keywords

Human nutrition and health, food science, functional foods

Position of the course

To study the relationship between nutrition and health in humans, the principles to evaluate nutrient requirements and nutritional status of humans (for individuals as well as for populations) are given. Techniques to formulate diets are explained and applied to protein, fat and micronutrient mixtures. In a more theoretical part, an overview is given of the nutritional composition of vegetable products, dairy products, oils and fats, meat and meat products, and stimulants. The influence on human health of bio-active compounds present in these products is discussed. The development of functional foods and their mechanism of action in humans is explained. A group discussion on a nutritional subject is included.

Contents

1. Introduction
2. The nutritional status: general overview, methods for determination of body composition
3. The nutritional requirements (for energy, protein, vitamins and anorganic nutrients)
4. The world hunger: current situation, causes, interventions
5. Functional foods: definition, legislation, claims
6. Vegetable products, dairy products, oils and fats, meat- and meat products, stimulants: nutritional composition and effects on human health
7. Alternative nutrition, nutrition for atletes, stimulants

Initial competences

Functional Foods builds on certain learning outcomes of course unit Human Nutrition (or the Dutch equivalent "voeding van de mens"); or the learning outcomes have been achieved

differently.

Final competences

1 The student has knowledge on the nutritional value of foods.
2 The presence of bio-active compounds in foods, as well as the mechanisms by which they influence human health, is understood.
3 Knowledge is obtained about techniques to evaluate nutrient recommendations and nutrient status of humans.
4 Principles for development of foods in relation to specific needs of humans are understood.
5 The student can present and defend a case-study related to nutrition and health.

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Group work, Seminar, Lecture, Independent work

Extra information on the teaching methods

Theory: oral lectures
Exercises: theoretical exercises are performed with the whole group while tasks are performed in smaller groups

Study material

Type: Syllabus

Name: Functional Foods
Indicative price: € 15
Optional: no
Language : English
Number of Pages : 177
Oldest Usable Edition : 2023-2024
Available on Ufora : No
Online Available : No
Available in the Library : Yes
Available through Student Association : Yes
Additional information: Slides shown during the lectures and additional information (scientific articles) are available via Ufora.

References

Human Energy Requirements. W.P.T. James and E.C. Scholield (eds.). Oxford University Press, Oxford, 1990
Functional foods: biochemical and processing aspects. Mazza, G. (ed.) Technomic Publishing Company, Inc., 1998
Introduction to Functional Food Science. Matirosyan, M. (ed.) Food Science Published Dallas, 4th Edition, 2020

Course content-related study coaching

For the theory and the theoretical exercises, contact hours are available in which the student can ask additional information and/or clarification.
A case-study is made on a topic of functional foods which is supervised by a scientific co-worker.

Assessment moments

end-of-term and continuous assessment

Examination methods in case of periodic assessment during the first examination period

Oral assessment, Peer and/or self assessment, Written assessment

Examination methods in case of periodic assessment during the second examination period

Oral assessment, Written assessment

Examination methods in case of permanent assessment

Assignment

Possibilities of retake in case of permanent assessment

examination during the second examination period is possible

Extra information on the examination methods

Theory: written examination
Exercises: written examination (open book)
For the non-period aligned examination a case-study needs to be presented and defended, and a report has to be submitted

Calculation of the examination mark

Theory: period aligned evaluation (60%)
Exercises: period aligned evaluation (20%) and non-period aligned evaluation in the case of group works (20%)
Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner (ie if mathematically the final score is 10/20 or more, then this score becomes 7/20). When the student wants to repeat the examination in a new examination period, an exemption for the non-period aligned evaluation can only be given in case minimum 50% of the marks were obtained.