WAGENINGEN
UNIVERSITY & RESEARCH

Diploma Supplement

BSc
Food Technology

The purpose of the Diploma Supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It is free from any value judgements, equivalence statements or suggestions about recognition. This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO.

1 INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1	Last name(s)	Last
1.2	First name(s)	First
1.3	Date of Birth (day/month/year)	27 May 1999
1.4	Student identification number or code	1234567

2 INFORMATION IDENTIFYING THE QUALIFICATION

2.1	Name of qualification and title conferred (in original language) Bachelor of Science in	Food Technology
2.2	Main field(s) of study for the qualification BSc programme in	Food Technology
	Minor	Global one Health
2.3	Name and status of the awarding institution (in original language)	Wageningen University; public university, state recognised
2.4	Name and status of institution (if different from 2.3) administering studies (in original language)	See 2.3
2.5	Language(s) of instruction/ examination	English

3 INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1	Level of the qualification	First cycle National Qualifications Framework for Higher Education; Level 6 NLQF and EQF for LLL.
3.2	Official duration of programme in credits and/or years	The official duration of the programme is 180 ECTS which equals three years of study. One ECTS equals 28 hours of study according to the European Credit Transfer and Accumulation System.
3.3	Access requirement(s)	The general access requirement for the Bachelor study programmes of Wageningen University is a diploma of six years general secondary education (VWO) or completion of the first year of a relevant bachelor's programme at a university of applied sciences. Some additional requirements may be set. Students who do not meet the access requirements can be admitted to the Bachelor's programme by the Bachelor's Admission Board.

4 INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of study

Full time Bachelor's programme

4.2 Programme learning outcomes

Learning Outcomes

After successful completion of this BSc programme graduates are expected to be able to:

- analyse problems related to food in a quantitative way, using basic mathematical and statistical principles;
- acquire, understand and apply theoretical knowledge of chemistry, physics, microbiology in relation to foods and the technological production processes;
- understand laboratory techniques and analytical measurements to be applied to food technology oriented cases;
- apply the basic principles of food quality and food safety and know how to manage these;
- acquire and understand basic concepts of consumer behaviour, marketing strategies and logistics in respect to the food production chain;
- resolve (under supervision) a pre-defined food technology related research question or design problem into verifiable research or design questions;
- develop and execute individually (under supervision) a research plan in which a research question, hypothesis, experimental set-up and data analysis are described in relation to relevant literature, in order to develop new knowledge or a new product or process;
- understand the importance and effect of sustainability in food production chains;
- identify and discuss on societal and ethical consequences of developments in the area of food technology;
- demonstrate an academic attitude by generating and recognizing creative ideas and recognizing the limits of scientific knowledge;
- work in a team and communicate with experts from related disciplines;
- search, find and analyse scientific literature in the field of food sciences;
- apply basic knowledge of a discipline of choice, preferably obtained through a well-motivated minor programme.

Learning Outcomes

After successful completion of this minor students are expected to be able to:

- understand basic concepts in health research (burden of disease, health governance, social justice, health equity, systems approach) and be able to explain/give examples of the role of nutrition, food safety, and interactions between humans, animals and their environment to health;
- understand the close connection between human, plant, animal and environmental health, and be aware of the most important themes within Global One Health, such as antibiotic resistance, emerging infectious diseases, healthy farming and wildlife health;
- apply skills to discuss and integrate potentially conflicting criteria and values (healthy, sustainable, affordable, ethical) when considering solutions for global one health problems;
- apply a systems approach to Global One Health issues, including food systems, life styles, mitigation strategies and decision support;
- implement a multidisciplinary approach for selected GOH problems.

4.3 Programme details, individual credits gained and grades/marks obtained

The following list shows all the courses of the programme the student has attended. It states the course, its number of credits, and the final mark the student obtained for it.

Subject	*Description*	*ECTS credits*	*Mark*
Common part			
PCC12303	General Chemistry 1	3	7.5
FPH10306	Food Technology I	6	7.0
ORC12803	Organic Chemistry 1	3	8.0
PCC12403	General Chemistry 2	3	6.5
CBI10306	Cell Biology	6	6.0
MAT15403	Statistics 2	3	6.5
ORC12903	Organic Chemistry 2	3	8.0
FCH11306	Nutritional Aspects of Foods	6	6.0
MAT14903	Mathematics 2	3	6.5
MAT15003	Mathematics 3	3	7.5
MIB10306	Microbiology & Biochemistry	6	6.0
ELS10301	Presentation Skills	1	6.5
FPH10803	Physical Chemistry for Food Scientists	3	7.0
FPE10808	Food Production Chains	8	8.0
FPE20806	Mathematical Concepts for Food Technology	6	6.5
FHM20306	Food Microbiology	6	6.0
FCH20806	Food Chemistry	6	6.5
FPE21306	Food Production and Preservation	6	6.5
FPH20306	Food Physics	6	6.5
FQD21306	Food Packaging and Design	6	6.5
FPE20306	Food Engineering	6	6.0
FHM22806	Food Hazards	6	7.0
FCH22308	Food Properties and Function	8	7.0
FQD20804	Quality Systems Operations	4	6.0
FQD24306	Case Studies Product Quality	6	6.5
MAT14803	Mathematics 1	3	6.0
YFS20301	Foreign Study Trip Food Technology	1	pass
YFS80824	BSc Thesis Food Science and Technology	24	7.0
Electives			
HNH30306	Psychobiology of Food Choice and Eating Behaviour	6	6.5
BSc Minor Global one Health (2020)			
CPT56006	Introduction to Global One Health	6	8.0
REG33306	Disease Ecology	6	7.0
BEC57306	Decision making in Global One Health	6	7.0
CHL23306	Health Issues in Daily Life; a Bèta-Gamma Approach	6	7.0
	Total	**181**	

Subject (course unit code)
The subject refers to the course unit code in the study handbook.

Duration of course unit
The duration of the course unit is described in the study handbook. Wageningen University has 6 periods. These are divided in 4 periods of 8 weeks (12 credits) and 2 periods of 4 weeks (6 credits). Except thesis' and internships almost all courses have a duration of 1 period.

1 full academic year = 60 credits
1 period = 6 or 12 credits

4.4 Grading system and, if available, grade distribution table

The grading table requires universities to keep track of their grading practice and culture, which is good practice in many institutions across Europe.
The ECTS grading table allows for simple, transparent interpretation and conversion of grades from one system or context to another, and therefore does justice to the level of academic performance of all learners. Used correctly, it bridges different grading systems as well as different cultures in the European Higher Education Area and beyond.
The grading table gives the distribution of grades for this specific programme. It presents how many students (in percentages) receive a specific grade. This provides all necessary information to convert the grade in any local grading system. In case of too few results to calculate the distribution, the programme specific grading table is replaced by the BSc average grading table.

National / Wageningen University Grade	*Total number awarded in reference group*	*Grading percentages Food Technology**
10.0	187	1.4%
9.5	339	2.5%
9.0	729	5.4%
8.5	1087	8.1%
8.0	1819	13.6%
7.5	2232	16.6%
7.0	2354	17.5%
6.5	2107	15.7%
6.0	2564	19.2%
Total	**13418**	**100%**

* Based on the total number of grades awarded in the degree programme concerned (or average Wageningen University BSc programmes) during three preceding years.

4.5 Overall classification of the qualification (in original language)

Not applicable

5 INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study

A Bachelor's degree makes a student eligible for a Master programme.

5.2 Access to a regulated profession (if applicable)

6 ADDITIONAL INFORMATION

6.1	Additional information	The BSc programme Food Technology is accredited on 11 June 2019 by the NVAO.
6.2	Further information sources	www.wur.eu/university Wageningen University Student Service Centre P.O. Box 414 6700 AK Wageningen The Netherlands www.nuffic.nl

7 CERTIFICATION OF THE SUPPLEMENT

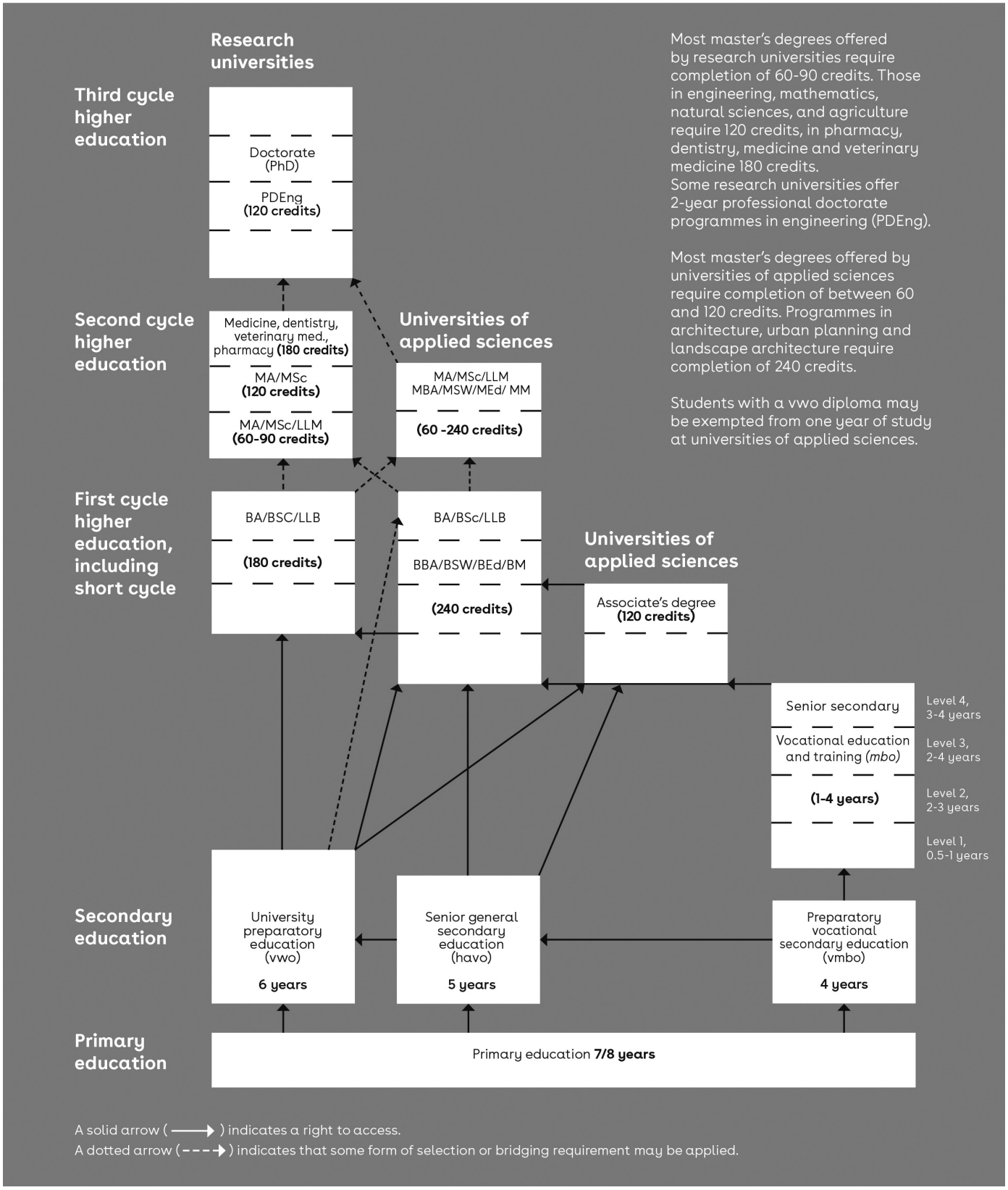
7.1	Date	13 August 2021
7.2	Signature	
		Mrs Ir I.M. (Ingrid) Hijman
7.3	Capacity	Head Student Service Centre
7.4	Official stamp	

8 INFORMATION ON THE NATIONAL HIGHER EDUCATION SYSTEM

See enclosed description of the education system in the Netherlands.

The Dutch education system

The higher education system in the Netherlands is based on a three-cycle degree system, consisting of a bachelor, master and PhD. Two types of programmes are offered: research-oriented degree programmes offered by research universities, and professional higher education programmes offered by universities of applied sciences.



Higher education system in the Netherlands

Higher education in the Netherlands is organised around a three-cycle degree system, consisting of bachelor's, master's and PhD degrees. Two types of higher education programmes are offered: research-oriented degree programmes offered primarily by research universities, and professional higher education programmes offered primarily by universities of applied sciences.

Primary and secondary education

Access to higher education

Children are allowed to begin school at the age of four, but are not legally required to do so until the age of five. Primary education lasts eight years (of which seven are compulsory). During their last year, pupils are advised on the type of secondary education they should pursue.

Secondary education, which begins at the age of twelve and is compulsory until the age of sixteen, is offered in various forms and at different levels. Vmbo programmes (four years) combine general and vocational education and prepare pupils to go on to senior secondary vocational education and training (mbo), lasting one to four years. There are two types of general education that grant admission to higher education: havo (five years) and vwo (six years). Pupils are enrolled according to their ability. The last two years of havo and the last three years of vwo are referred to as the 'second phase' (*tweede fase*), or upper secondary education. During these years, pupils focus on one of four subject clusters (*profielen*), each of which emphasises a certain field of study in addition to satisfying the general education requirements. Each cluster is designed to prepare pupils for study at the tertiary level. A pupil enrolled at a vwo or havo school can choose from the following subject clusters:

1. Science and Technology (*Natuur en Techniek*)
2. Science and Health (*Natuur en Gezondheid*)
3. Economics and Society (*Economie en Maatschappij*)
4. Culture and Society (*Cultuur en Maatschappij*)

Only the six-year vwo diploma grants access to bachelor's programmes at research universities; the vwo diploma, havo diploma and the highest level of mbo grant access to bachelor's programmes at universities of applied sciences.

Higher education

Higher education in the Netherlands is offered at two types of institutions: research universities and universities of applied sciences. Research universities include general universities, universities specialising in engineering and agriculture, and the Open University. Universities of applied sciences include general institutions as well as institutions specialising in a specific field such as agriculture, fine and performing arts or teacher training.

Whereas research universities are primarily responsible for offering research-oriented programmes, universities of applied sciences are primarily responsible for offering

programmes of higher professional education, which prepare students for specific professions. These tend to be more practice oriented than programmes offered by research universities.

In this binary, three-cycle system, bachelor's, master's and PhD degrees are awarded. Short cycle higher education leading to the associate's degree is offered by universities of applied sciences. Degree programmes and periods of study are quantified in terms of the ECTS credit system.

The focus of degree programmes determines both the number of credits required to complete the programme and the degree which is awarded. A research-oriented bachelor's programme requires the completion of 180 credits (three years) and graduates obtain the degree Bachelor of Arts, Bachelor of Science, or Bachelor of Laws. (BA/BSc/LLB), depending on the discipline. In most cases, a bachelor's degree awarded in the applied arts and sciences requires 240 credits (four years), to complete. The majority of students obtain a BA/BSc/or LLB degree, but those graduating from programmes in business administration, social work, education and music may obtain a BBA/BSW/BEd or BM, respectively. Students who have a vwo diploma may be exempted from one year of study, allowing them to complete a bachelor's programme in the applied arts and sciences in three years (after completion of 180 credits). An associate's degree (Ad) in the applied arts and sciences requires 120 credits (two years), and students who complete the two-year programme can continue studying for a bachelor's degree in the applied arts and sciences.

A research-oriented master's programme requires the completion of 60, 90 or 120 credits (one, one-and-a-half or two years). In engineering, agriculture, and mathematics and the natural sciences, 120 credits are always required. Graduates obtain a Master of Arts, Master of Science, or Master of Laws (MA/MSc/LLM). A master's degree awarded in the applied arts and sciences requires the completion of 60 to 120 credits. The majority of students obtain an MA/MSc/or LLM degree, but those graduating from programmes in business administration, social work, education and music may obtain an MBA/MSW/MEd or MM, respectively.

The third cycle of higher education, leading to a PhD or to a Professional Doctorate in Engineering (PDEng), is offered only by research universities. The major requirement for the PhD, which is offered by all research universities, is completion of a dissertation based on original research that is publicly defended. In addition to PhD programmes, the three engineering universities offer technological designer programmes consisting of advanced study and a personal design assignment in a number of engineering fields. The technical designer programme requires two years of study to complete and graduates obtain the degree Professional Doctorate in Engineering (PDEng). The training of medical specialists is the responsibility of the professional group in an organisational setting at a university hospital.

Requirements for access to higher education

For access to research-oriented bachelor's programmes, students are required to have a vwo diploma or to have completed the first year (60 credits) of a bachelor's programme at a university of applied sciences. For the latter category of students, additional selection criteria may apply. The minimum access requirement to universities of applied sciences is either a

vwo diploma, a havo diploma or a diploma of secondary vocational education (mbo), provided certain conditions are met. The vwo diploma not only grants access to universities of applied sciences, but based on this diploma, students may receive exemption from one year of study as well. For access to both types of higher education, pupils with a vwo or havo diploma are required to have completed at least one of the subject clusters that fulfil the requirements for the higher education programme in question. A quotum, or *numerus fixus*, applies for access to certain programmes, primarily in the medical sciences. For *numerus fixus* programmes, institutions are permitted to select the students they admit based on academic performance, personal motivation, etc. Potential students older than 21 years who do not possess one of the qualifications mentioned above can qualify for access to higher education on the basis of an entrance examination and assessment (recognition of prior learning). For access to certain programmes, particularly those in the fine arts, students have to demonstrate the required artistic abilities. The only access requirement for the Open University is that applicants be at least eighteen years of age.

For access to all master's programmes, a bachelor's degree in one or more specific disciplines is required, in some cases in combination with other requirements. Graduates with a bachelor's degree in the applied arts and sciences usually have to fulfil additional requirements for admission to a research-oriented master's programme.

Credit system and grading

A student's workload is measured in ECTS credits. According to Dutch law, one credit represents 28 hours of work and 60 credits represents one year of full-time study. The grading system used in the Netherlands is on a scale from 1 (very poor) to 10 (outstanding). The lowest passing grade is 6; 9s are seldom given and 10s are extremely rare. Grades 1-3 are hardly ever used. The academic year is 42 weeks long.

Quality assurance and accreditation

A guaranteed standard of higher education, and alignment with the Qualifications Framework for the European Higher Education Area, is maintained through a system of legal regulation and quality assurance, in the form of accreditation. The Ministry of Education, Culture and Science is responsible for legislation pertaining to education. The agriculture and public health ministries play an important role in monitoring the content of study programmes in their respective fields.

Quality assurance is carried out through a system of accreditation, administered by the Accreditation Organisation of the Netherlands and Flanders (NVAO). According to the Dutch Higher Education Act, all degree programmes offered by research universities and universities of applied sciences must be evaluated according to established criteria. Programmes that meet the criteria are accredited: i.e. recognised for a period of six years. Only accredited programmes are eligible for government funding; students receive financial aid and graduate with a recognised degree only when enrolled in, and after having completed, an accredited degree programme. All accredited programmes are listed in the Central Register of Higher Education Study Programmes (CROHO).

As part of the accreditation system,, higher education institutions can request the NVAO to conduct an 'institutional quality assessment' to determine the extent to which the institution is capable of guaranteeing the quality of the programmes it offers. Programmes offered by institutions that receive a positive evaluation still have to be accredited, but the accreditation procedure takes less time and is not as extensive.

Besides the accreditation of degree programmes, the Netherlands has a system by which the Ministry of Education, Culture and Science recognises higher education institutions by conferring on them the status of either 'funded' or 'approved'. "Funded" indicates the institution is fully financed by the government. "Approved" indicates that the institution does not receive funds from the government and has to rely on its own sources of funding. Whether a degree programme is offered by a 'funded' or an 'approved' institution, it must be accredited and registered in CROHO to be considered recognised.

Please note: if a bachelor's or master's degree programme is not registered in CROHO, the quality is not assured by the Dutch quality assurance system. The quality may however be assured by another system.

National Qualifications Frameworks

An important tool to facilitate the recognition of foreign qualifications is using overarching qualifications frameworks as a translation tool through which qualifications awarded in one country can be compared to qualifications awarded abroad. A comprehensive overarching framework used in the European Economic Area is the European Qualifications Framework for Lifelong Learning (EQF-LLL). The EQF-LLL describes the learning outcomes associated with qualifications at eight different levels and is used as a common reference framework to assist in comparing national qualifications systems and their levels. The qualifications framework in the Netherlands is referred to as the Dutch Qualifications Framework (NLQF).The NLQF was officially referenced to the EQF in 2012. The NLQF has a total of nine levels: an "entry level" which is below level 1 of the EQF-LLL and therefore not referenced to the EQF-LLL, and 8 levels which are referenced to the 8 levels of the EQF. Further information on the Dutch Qualifications Framework can be found on the website of the National Coordination Point NLQF , which is the organization responsible for the development and implementation of the NLQF.