

First year courses

## **Health Food Innovation Management Year 1**

Fac. Health, Medicine and Life Sciences

### **Food and Nutrition in Health and Disease**

#### **Full course description**

This course covers the multidisciplinary aspects of the health food business, with a focus on the health aspects of food.

The functionality and efficacy of food and beverage products will be explained and discussed. Targets of nutritional health management and disease risk reduction will be evaluated in the light of appropriate biomedical research and the weight of the scientific evidence. Special focus will be given to obesity, diabetes, cardiovascular disease, intestinal disorders, ageing and sensoric perception of food. Biomedical aspects of digestion, bioavailability, distribution and metabolism of selected food components from various macro- and micro nutrient classes as well as bio-active plant substances are discussed and interpreted in the context of efficacy and health claim substantiation.

food fairs to get an appreciation of the food and beverage business, and learn how business takes place at such fairs. Students will learn from discussing relevant problem cases. This will be done in small groups in alignment with problem based learning principles. Additionally, invited guest speakers from external institutes and industry will teach essentials about consumer concerns, desired health benefits and related market segments. On several occasions and if the (intern)national regulations allow this in the light of the current COVID-19 pandemic, all HFIM students (year 1 and year 2) will attend international

#### **Course objectives**

- A broad understanding of the business of healthy eating
- Essentials of digestion, bioavailability, distribution and metabolism of selected food components on health management and disease risk reduction related to Heart Health, Gut Health, Weight Management, Diabetes, Personalised Nutrition, Vitality and Healthy Ageing, Cognition and Mental Performance, Sports Nutrition and Clinical Nutrition
- Knowledge on food ingredient classes such as carbohydrates, fibres, lipids, proteins, antioxidants and bioactives
- Comprehension of the etiology of- and patho-biological theories of chronic metabolic disorders in which lifestyle and diet play a significant role, especially obesity, diabetes, cardiovascular disease and irritable bowel syndrome
- Comprehension of the role of epidemiology in assessing "Diet- Health" relationships

## Recommended reading

[This is the link to Keylinks, our online reference list.](#)

HFV1001

Period 1

4 Sep 2023

27 Oct 2023

[Print course description](#)

ECTS credits:

12.0

Instruction language:

English

Coordinator:

- [F.J. Troost](#)

Teaching methods:

Assignment(s), Work in subgroups, Lecture(s), Presentation(s), PBL

Assessment methods:

Attendance, Participation, Written exam

Keywords:

food innovation, nutrition, bioavailability, metabolism, health management, food components, food ingredients

Fac. Health, Medicine and Life Sciences

## Entrepreneurship and Innovation in Food Business

### Full course description

In this course you will explore the origin of business opportunities that relate to food innovation and learn why only a few of the discovered opportunities are pursued, how ideas are transformed in products and business concepts, and how small initiatives can develop into large businesses. The primary goal of this course is to develop an understanding of the key components of successful business development, innovation and entrepreneurship in general and in the Health Food industry in particular. This course covers the entrepreneurial process from conception of a product and/or business opportunity to the birth of the new venture and its product launch. It looks at both the process and the people involved in assessing ideas, exploiting opportunities, gathering resources, and converting concepts into businesses. In the course we also look at the challenges to product innovation in large multinational food companies. We will explore scholarly insights that you can use throughout your career in the Health Food business (in a broad sense). It is not only relevant for those who may eventually venture off themselves. It is as valuable to those who will deal with product and/or business development in their professional careers. Entrepreneurs are found in virtually every business where an entrepreneurial drive (exploiting opportunities) is necessary for the firm's survival. Through case studies, tutorials, and a field project you explore how new products and businesses are conceived, developed and grown. In doing so, it provides future innovators with a framework for selecting, funding, and executing product innovation projects. It also allows them to explore food innovation in a broad variety of organisations. A field project allows you to start building a relevant network in the food industry.

## Course objectives

- A broad understanding of the business of healthy eating
- Understanding of the drivers and processes of entrepreneurship and biosciences innovation: building a business case for innovative solutions based on information from the market, the regulatory environment, technology assessment and IP space and implementing appropriate project management with a special focus on Change Management
- Integrate the disciplines of life sciences or agro/food innovation with economics and management, to drive the innovation chain
- Skilled in concept development
- Skilled in time management
- Skilled in project management
- Able to build a business case and establish an appropriate business plan.

## Recommended reading

[This is the link to Keylinks, our online reference list.](#)

HFV1002

Period 1

4 Sep 2023

27 Oct 2023

[Print course description](#)

ECTS credits:

13.0

Instruction language:

English

Coordinator:

- [R.P.M.G. Broersma](#)

Teaching methods:

Assignment(s), Lecture(s), Paper(s), PBL, Working visit(s), Work in subgroups, Presentation(s)

Assessment methods:

Assignment, Attendance, Participation, Written exam, Presentation

Keywords:

entrepreneurship, biosciences innovation, life sciences, economics, management, food innovation, business development

Fac. Health, Medicine and Life Sciences

## Consumer Understanding and Behaviour

### Full course description

The business of “healthy eating” can be tricky and a better understanding the psychology of health behavior is a great asset when you develop novel health foods. In this course we will take a look at the basic psychological concepts that account for individual consumer behaviour and demonstrate how these concepts can be applied to the context of (health) food products. The discussion and study material will be organised around the consumer's purchase and consumption process, going from need recognition to actual consumption. Furthermore, at the end of the course, you will understand how emotions, perceptions, expectations, and context can often lead people astray. The course

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consists of lectures and tutorial sessions. The lectures will be given by academic researchers and deal with topics such as food innovation, obesity, food temptations etc. The tutorial sessions fulfill the purpose to discuss central aspects of consumer behaviour such as, for instance, beliefs, self-control, and social influence.

### Course objectives

- In-depth insights in consumer health concerns;
- Insights in research methods used to understand the market and its dynamics, especially consumer desires, concerns, perceptions and behaviour;
- Understanding environmental and socio-economical influences on food consumption;

### Recommended reading

All articles can be downloaded in Ebsco

HFV1003

Period 3

8 Jan 2024

2 Feb 2024

[Print course description](#)

ECTS credits:

10.0

Instruction language:

English

Coordinator:

- [C. Goukens](#)

Teaching methods:

Assignment(s), Lecture(s), Work in subgroups, PBL, Paper(s), Research, Presentation(s), Training(s)

Assessment methods:

Assignment, Attendance, Participation, Presentation, Written exam, Final paper

Keywords:

Consumer behaviour, food consumption, psychology, nutrition, health, food innovation

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## Food Innovation and New Product Development

### Full course description

Within this course, we will give specific attention to health properties of specific food ingredients as well as to selected topics of technological aspects that may impact on the functional properties of the ingredients. The course will introduce you to the concepts of food science and technology and the market segmentation as is presented by the food industry by means of specialized product categories (e.g., bakery, dairy, confectionary). Specific product categories may or may not be ideal “carrier systems” for the addition of components that are desirably used and marketed for specific health purposes (e.g., a dairy drink as a carrier for pre- and probiotics to promote a healthy digestion). Besides the theoretical information, tutorials, practicals and some feedback sessions will be used to elaborate deeper in certain topics to create a proposal for a new product development

(NPD). At the end of the course, you will have elaborated an idea of a food product that could be healthy, sustainable, innovative and feasible to be produced.

## Course objectives

**In summary, this course will focus on:**

- To explain various food categories, among which dairy, bakery, beverage, confectionary, fruit and vegetable and meat as potential carrier systems for health ingredients.
- To analyze food ingredient classes such as carbohydrates, fibers, lipids, proteins and bioactive compounds and their possible use to develop new food products.
- To evaluate current and emerging technologies that impact on the food production process and the opportunities for innovation in the area of food composition profile, taste, texture and mouth-feel.
- To integrate all the knowledge on the steps necessary to translate research results to scientific and societal impact, e.g. which safety and efficacy studies need to be performed.
- To explain what steps are needed to bring an idea from the lab to a product on the market and achieve societal impact of research results, e.g. to identify the relevant stakeholders, actions needed to acquire a patent, and the steps need to be taken to come from a prototype to large scale production.
- To evaluate and improve the sustainability aspects of the different aspects of product development ranging from the supply chain to food developments.
- To develop an idea of a food product that could be healthy, sustainable, innovative and feasible to be produced.

## Recommended reading

[This is the link to Keylinks, our online reference list.](#)

HFV1004

Period 4

5 Feb 2024

5 Apr 2024

[Print course description](#)

ECTS credits:

10.0

Instruction language:

English

Coordinator:

- [M.M.J.P.E. Sthijns](#)

Teaching methods:

Assignment(s), Work in subgroups, Lecture(s), PBL, Presentation(s), Working visit(s), Skills, Paper(s)

Assessment methods:

Assignment, Attendance, Final paper, Participation, Presentation, Written exam

Keywords:

Food/ingredient categories, carrier systems, food technology, production, Sustainability, sensory evaluation

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# Scientific Methods and Analytics

## Full course description

After graduation, you will have to translate and communicate industrial- and consumer relevant questions into innovative scientific research questions, and interpret scientific results for the benefit of product development. This requires thorough insight in the skills which are needed to design, conduct and understand experiments in nutritional sciences. Accordingly, this course is designed to train you in the methodology of scientific (specifically nutritional) studies, and provide you with knowledge on a number of analytical techniques and practical skills, which are essential to conduct scientific intervention trials for the substantiation of for example product benefit claims. A broad view with attention to in vivo, ex vivo and in vitro technologies will be offered. Special attention will be given to epidemiological research. Epidemiology is an important scientific discipline, especially in an industrial setting, where often the methodology and facilities are lacking to conduct large-scale interventions. In this course, we will discuss descriptive epidemiology and develop the skills to find, critically read and judge the quality of scientific literature. All activities will be supported by problem cases, which will be discussed in Problem Based Learning groups. On each of the different topics which are covered, lectures will be provided by academic staff.

## Course objectives

- Comprehension of the etiology of- and patho-biological theories (and research behind these theories) of chronic metabolic disorders in which lifestyle and diet play a significant role
- Comprehension of the role of epidemiology in assessing “Diet-Health” relationships;
- Understanding public health and risk/benefit assessment (incl. toxicology aspects);
- Insight in clinical trial design and its role related to impact on the degree of health benefit evidence;
- Insight in the design and role of meta-analyses and reviews;

## Recommended reading

- Original recent research articles that will be referred to in the syllabus.
- Original research articles and reviews on relevant topics, to be collected on own initiative, according to training 'how to find and interpret scientific literature'.

HFV1005

Period 4

5 Feb 2024

5 Apr 2024

[Print course description](#)

ECTS credits:

10.0

Instruction language:

English

Coordinator:

- F.H.M. van Osch

Teaching methods:

Assignment(s), PBL, Lecture(s), Work in subgroups, Paper(s)

Assessment methods:

## **Skill Training Project Management**

### **Full course description**

Entrepreneurial ventures that seek to commercialize new technology need to develop a clear path by which a theoretical claim, or a lab model can be transformed into a “real” product. Effective management of the product and production engineering effort is key, as technology ventures usually require many man-hours for research, development and engineering. Project management skills prove to be of great value in prioritizing tasks and in allocating resources. In addition, you will have to be able to get other people interested in your effort. Investors or managers are happy to take technical risks (much less so for market risks) when entrepreneurs or business developers can show that they understand how technological uncertainty will be reduced to known risks. This requires excellent interpersonal skills as one can only convince others when one can listen.

Technical and engineering insight and foresight are important, yet most books and courses on entrepreneurship appear to neglect the engineering challenges that high-tech ventures face. In particular, project management is extremely valuable to technology ventures as it helps entrepreneurs and business developers to decompose the engineering effort into tasks, and to prioritize and sequence these tasks with the aim to reduce risks, minimize development time & costs.

### **Course objectives**

Primary goal:

- Students understand the key role of product and production engineering in reducing the technical risks of technology based entrepreneurial ventures;
- Students are competent at deploying methods that allow one to save development cost and/or that can reduce development risk and uncertainty;

Secondary goals:

- Students know how to apply the practical skills required to craft a project plan

### **Recommended reading**

- W.M.F. Jongen & M.T.G. Meulenbergh (eds.), 2005, Innovation in Agri-Food Systems. Wageningen Academic Publishers
- Ulrich, K. T., & Eppinger, S. D. 2008. Product design and development (4th ed.). Boston: McGraw-Hill Higher Education
- Gray, C. F., & Larson, E. W. 2008. Project management: the managerial process (4th ed.). Boston: McGraw-Hill/Irwin.

10 Jun 2024

5 Jul 2024

[Print course description](#)

ECTS credits:

5.0

Instruction language:

English

Coordinators:

- G.P.M. Poppe
- G.P.M. Poppe

Teaching methods:

Assignment(s), Work in subgroups, Lecture(s), PBL, Paper(s), Training(s)

Assessment methods:

Assignment, Attendance, Final paper, Participation

Keywords:

Project Management Entrepreneurship

Second year courses

## Health Food Innovation Management Year 2

Fac. Health, Medicine and Life Sciences

### European Food Law in a Global Context

#### Full course description

Health Foods – Scientific and Regulatory Environment is a course that covers both the regulatory and scientific framework of EU food law and governance. In the last decades it has become clear that food safety is an inherent aspect associated with food consumption and nutrition; an aspect that in the aftermath of the BSE crisis of 1996, has highly ranked on the political and legislative agenda of the EU and its Member States. Moreover, political and socio-economic developments in developed countries have resulted in a more secure and abundant food supply than ever before. It is not surprising that in this context we may observe an increasing number of foods labelled and advertised in the EU bear nutrition and health claims. In order to ensure a high level of protection for consumers, to facilitate their choice, and to ensure their safety, the EU has set a variety of requirements concerning food safety as well as health and nutrition claims.

This course deals with this variety of requirements and will provide in-depth knowledge and critical understanding of both the theoretical and practical aspects of safety, health and nutrition aspects of foods. It will hereby focus on the EU regulatory regime, but also give an insight into the global setting. It will give an appraisal of role of risk assessor and risk manager in the regulation of food products and substances. To this end, the course will first introduce students to the definition of law and the legal terminology. It will subsequently give in-depth insights in the whole set of regulatory requirements set by the EU. The course ultimately will give a critical understanding of the complex relationship of science and the law.

#### Course objectives

- Insights in the regulatory provisions that are applicable to food;



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- indepth-knowledge and critical understanding of the theoretical and practical aspects of EU food regulation;
- appreciation of regulatory environment: functional foods, novel foods, health claims, nutrition content claims, regulations and requirements for approval submissions in EU; appreciation of the WTO requirements on food;
- better understanding of how the EU works in practice;
- critical analysis of the challenges that the EU faces in regulating food, in particular as regards market versus non market values, science versus non-science concerns.

## Recommended reading

[This is the link to Keylinks, our online reference list.](#)

HFV2001

Period 1

4 Sep 2023

27 Oct 2023

[Print course description](#)

ECTS credits:

10.0

Instruction language:

English

Coordinator:

- [L. Díez Sánchez](#)

Teaching methods:

Assignment(s), PBL, Lecture(s)

Assessment methods:

Final paper, Written exam

Keywords:

Regulatory environment, health claims, food law, innovation, food safety, risk assessment, EU, WTO  
Fac. Health, Medicine and Life Sciences

## Skill Training Health and Food Venture Creation

### Full course description

In this course you will engage in a business planning project for which you engage in idea generation, feasibility analysis, business modelling, and financial planning. You will start by identifying a novel patented technology that could be used to create a product innovation. In the rest of the course you will explore the market, technical, operational and financial feasibility of the proposed innovation project. A business plan is a call for action: to kick-start product development and/or new venture creation it is key to prepare for the steps needed to turn an identified opportunity into a viable business. In this course you develop both theoretical and practical insight into the start-up processes of new ventures and of the role of business planning in preparing for the eventual pursuing of an opportunity. You will develop a plan for either a new (and independent) enterprise or for a new business activity in an established firm. It is not by accident that this course is the final one in the master's programme. In many ways it can serve as a capstone course that will challenge you to mobilize what you have learned in the preceding courses. Attempting to develop innovative products out of novel bioscience insights and technologies will force you to show that you

can link regulatory constraints, consumption and purchase patterns, production economies and competing solutions to your project. It is one of the few courses that relies on personal initiative as you will have to do substantial field research with potential clients, consumers, partners, advisors and financiers. Where the programme is based on the assumption that food innovation can be based on enabling technologies developed by academics and ingredients manufacturers, this course will allow you to learn what it takes to transform science and technology into business.

### Course objectives

- A broad understanding of the business of healthy eating
- Understand the drivers and processes of biosciences based food innovation, business development and entrepreneurship
- Understand the triggers of food innovation and the key challenges of translating perceived opportunity into a marketable product
- Appreciate the consequences of business modelling choices on the feasibility and value promise of food innovations and food ventures
- Translate scientific data to industrially relevant input and concepts
- Able to apply project management methods to the development of novel technology, foods or services
- Able to develop a business plan for an innovative product or services based on market and competitive research, the regulatory environment, operational analysis and an assessment of financial needs and the expected return
- Critical assessment of practical problems (and their solutions) that relate to doing food innovation
- Able to discuss opportunities and plans for food related business opportunities with scientists, IP experts, marketeers, food engineers and investors
- Integrate new insights from the disciplines of life sciences or agro/food technology with economics and management, to drive science based food innovation
- Is able to learn from own and team performance
- Is able to learn from negative experiences and failures
- Skilled in project management
- Able to build a business case and establish an appropriate business plan.

### Recommended reading

[This is the link to Keylinks, our online reference list.](#)

HFV2002

Period 2

30 Oct 2023

22 Dec 2023

[Print course description](#)

ECTS credits:

10.0

Instruction language:

English

Coordinators:

- [F.J. Troost](#)
- B. van den Bergh

## Master Health Food Innovation Management

Teaching methods:

Assignment(s), Work in subgroups, Lecture(s), Paper(s), PBL, Presentation(s), Research, Working visit(s)

Assessment methods:

Attendance, Participation, Final paper, Presentation

Keywords:

business development, entrepreneurship, food innovation, project management, business plan, economics, management, technology

Fac. Health, Medicine and Life Sciences

## Internship

### Full course description

see <https://intranet.maastrichtuniversity.nl/en/campus-venlo-stud/my-studies/thesis-and-internships>

HFV2003

Year

1 Sep 2023

31 Aug 2024

[Print course description](#)

ECTS credits:

0.0

Instruction language:

English

Coordinator:

- [H.R. Gosker](#)

Teaching methods:

Skills, Training(s), Working visit(s)

Assessment methods:

Attendance, Observation, Participation

Fac. Health, Medicine and Life Sciences

## Thesis

### Full course description

see <https://intranet.maastrichtuniversity.nl/en/campus-venlo-stud/my-studies/thesis-and-internships>

HFV2004

Year

4 Sep 2023

31 Aug 2024

[Print course description](#)

ECTS credits:

40.0

Instruction language:

English

## Master Health Food Innovation Management

Coordinator:

- [H.R. Gosker](#)

Teaching methods:

Paper(s), Research

Assessment methods:

Final paper