Master Health Food Innovation Management

Find another programme

First year courses

Health Food Innovation Management Year 1

Fac. Health, Medicine and Life Sciences

Consumer Concerns, Health Targets and Market Segments

Full course description

This course covers the multidisciplinary biomedical, technical and commercial backgrounds of the business of "Healthy Eating". Food and beverage product types, their functionality and efficacy are explained and discussed. Biomedical aspects of digestion, bioavailability, distribution and metabolism of selected food components from various macro- and micro nutrient classes as well as bioactive substances are highlighted and interpreted in the context of efficacy and claims substantiation. Food categories that optimally can be enriched with health modulating food components as well as selected examples of currently researched nutrient categories will be discussed. Additionally, aspects of nutritional health management targets and disease risk reduction possibilities will be evaluated in the light of appropriate biomedical research and the weight of the evidence. A special focus will be on relevant health-compromising conditions, such as cardiovascular disease, obesity, diabetes and digestive disorders. You will learn from discussing specific cases in small groups, according to Problem Based Learning (PBL) principles. Moreover, invited guest speakers from academia and industry will teach essentials about consumer health concerns, desired benefits, benefit substantiation and related market segments in invited lectures.

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

HFV1001
Period 1
30 Aug 2021
17 Dec 2021
Print course description
ECTS credits:
12.0
Instruction language:

Master Health Food Innovation Management

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 and beverage categories, digestion, bioavailability, nutrition, metabolism, food components, health management, food ingredients
Fac. Health, Medicine and Life Sciences

Biosciences Innovation, Entrepreneurship and New Ventures

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

The suggested readings for the tutorial sessions are available through the university e-library. You are to find additional scholarly readings for all your tutorials.

HFV1002
Period 1
30 Aug 2021
17 Dec 2021
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, Work in subgroups, Presentations
Assessment methods:
Assignment, Attendance, Participation, Presentation, Written exam
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” is known to have a relatively high product failure rate. Basic questions addressed in this course are: Why do people eat what they eat and why is this so difficult to change. Triggering health-conscious purchase and consumption behaviour requires a thorough understanding of consumer behaviour. 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, students will be explained how emotions, perceptions, expectations and context can often lead people astray. The general principles will be specified and applied to nutrition and health. The course 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, motivation, perception and learning.

Course objectives

- In-depth insights in consumer health concerns;

Master Health Food Innovation Management

- 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
3 Jan 2022
18 Feb 2022
Print course description
ECTS credits:
10.0
Instruction language:
English
Coordinator:

- C. Goukens - Mertens

Teaching methods:
Assignment(s), Work in subgroups, Lecture(s), PBL, Paper(s), Research, Presentation(s), Training(s)
Assessment methods:
Assignment, Attendance, Presentation, Participation, Written exam, Final paper
Keywords:
Consumer behaviour, food consumption, Psychology, nutrition, Health, food innovation
Fac. Health, Medicine and Life Sciences

Food and Ingredient Categories, Carrier Systems and Food Technology

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 and working 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, innovative and feasible to be produced.

Course objectives

In summary, this course will focus on:

- To provide knowledge for the comprehension of 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 give insight in 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, the relevant stakeholders, actions needed to acquire a patent, which safety and efficacy studies need to be performed, which 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 apply knowledge to develop an idea of a food product that could be healthy, sustainable, innovative and feasible to be produced.

Recommended reading

The recommended literature will be selected for each case, based on recent published literature. However, it is highly recommended to self study the following book: Campbell-Platt, G., & International Union of Food Science and Technology (Eds.). (2017). Food science and technology (Second edition). Hoboken, NJ, USA: Wiley.

HFV1004
Period 4
21 Feb 2022
3 Jun 2022
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 categories, ingredient categories, carrier systems, food technology, food production, food composition
Fac. Health, Medicine and Life Sciences

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 biomedical experiments. Accordingly, this course is designed to train you in the methodology of scientific 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 product benefit claims. A broad view with specific attention to dedicated 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 small-scale interventions. In this course, specific attention will be paid to descriptive epidemiology, and to skill development to find, critically read and judge the quality of epidemiological 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. Scientists working in an industrial setting will provide lectures to show the application of the diverse techniques in food industry.

Course objectives

- 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;
- Insights in emerging technologies that impact on the food production process and the opportunities for innovation in the area of food composition, taste, texture and mouth-feel;
- 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-analysis;

Recommended reading

- Original recent research articles that will be referred to in the course book
- 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
21 Feb 2022
3 Jun 2022
Print course description
ECTS credits:
10.0
Instruction language:
English
Coordinator:

- F.H.M. van Osch

Teaching methods:

Master Health Food Innovation Management

Assignment(s), PBL, Lecture(s), Work in subgroups
Assessment methods:
Assignment, Attendance, Participation, Written exam
Keywords:
Methodology, analysis, Epidemiology, experiments, technology, clinical trial design, Skills, Research
Fac. Health, Medicine and Life Sciences

Laboratory Practicals

Full course description

Throughout this course, knowledge on several life science technologies, which are widely in use in the interface between food industry and health and nutrition science, will be obtained during the case preparations and PBL discussions. In order to come up with original research concepts for the development of novel ingredients or to test new hypotheses on existing food products, a good understanding of the available scientific models available, and especially on the pros and cons of these models is pivotal. Biomedical analysis techniques, using a variety of biochemical assays on different samples with specific focus on human in vivo methods will be demonstrated in laboratory sessions at the specialized laboratory facility at the Maastricht UMC/FHML facility in Maastricht.
HFV1105
Period 4
31 Jan 2022
1 Apr 2022
Print course description
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- F.H.M. van Osch

Teaching methods:
Assignment(s), PBL, Skills
Assessment methods:
Participation, Final paper
Fac. Health, Medicine and Life Sciences

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 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 goals:

- 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. Meulenberg (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.

HFV1006
Period 6
6 Jun 2022
1 Jul 2022
Print course description
ECTS credits:
5.0
Instruction language:
English
Coordinator:

- G.P.M. Poppe

Teaching methods:
Assignment(s), Work in subgroups, Lecture(s), Paper(s), PBL, 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

Health Foods, Scientific and Regulator

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;
- 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 versons non-science concerns.

Recommended reading

The preparation for the lectures and tutorials will involve (to a varying degree depending on each subject) a thorough analysis of both primary sources (EU Treaties, secondary EU legislation and case-law of the European Court of Justice, WTO law and scientific dossiers) and literature. Materials for lectures and tutorials will indicated for each subject separately. In some cases no material is indicated. In these instances a large part of preparing for the tutorial session is to identify the relevant literature, documents, legislation and case law as well as other material of relevance.

HFV2001

Master Health Food Innovation Management

Period 1
1 Sep 2021
22 Oct 2021
Print course description
ECTS credits:
10.0
Instruction language:
English
Coordinator:

- S. Roettger - Wirtz

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 Lab

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 you 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

Mandatory literature: - Knott, A. M. (2008). Venture design (available from the author's website as a free ePub E-reader)

HFV2002
Period 2
25 Oct 2021
17 Dec 2021
Print course description
ECTS credits:
10.0
Instruction language:
English
Coordinators:

- F.J. Troost
- B. van den Bergh

Teaching methods:
Assignment(s), Work in subgroups, Lecture(s), Paper(s), PBL, Presentation(s), Research, Working visit(s)
Assessment methods:
Attendance, Participation, Final paper
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 2021
31 Aug 2022
Print course description
ECTS credits:
0.0
Instruction language:
English
Coordinator:

- H.R. Gosker

Teaching methods:
Training(s), Work in subgroups, 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
1 Sep 2021
31 Aug 2022
Print course description
ECTS credits:
40.0
Instruction language:
English
Coordinator:

- H.R. Gosker

Teaching methods:
Paper(s), Research
Assessment methods:
Final paper