



Hochschule für Angewandte Wissenschaften Hamburg

Hamburg University of Applied Sciences

Life Sciences International Programme

Nutrition & Public Health Modules

Life Sciences Engineering Modules

Spring 2010

Nutrition & Health – Programme structure

BUSINESS MODULES

- Consumer Behaviour
- Food Marketing
- Marketing Research Project
- International Human Resource Management

FOOD SCIENCE MODULES

- International Food Reg.
- Sensory Analysis
- Nutritional Science Project
- German Food and Culture
- Quality of Nutrition & Hygiene in Catering Services

PUBLIC HEALTH & NUTRITION MODULES

- Public Health Nutrition
- Public Health Project
- Eating Behaviour
- Ergonomics with lab
- Food Safety & Public Health Policy in Europe

GENERAL MODULES

- Project Management
- Academic English
- Working in Multicultural Groups
- Survival German

Students should have some background knowledge of Nutrition and Health Sciences, when taking the Food Science and/or Public Health & Nutrition modules.

All modules are taught in English. Each module is worth 5 ECTS credits.

Per term there are several modules of 5 credit points each allowing for a maximum of 25 CP. To achieve 30 CP it is possible to choose a module from another term.

Students can choose one term or - as lecture plans allow - modules from different terms.

On successful completion students will obtain a certificate - Life Sciences International Programme -.

Start of semester 15. March 2010

End of semester 16. July 2010

Registration deadline (for partner universities and freemovers): **30. October 2009**

BUSINESS MODULES

Module Name: Consumer Behaviour	Lecturer: Prof. Dr. H. Laberenz
Course objectives: <ul style="list-style-type: none"> ▪ Students develop a general insight into the complexity of human behaviour and relate it to consumption processes (esp. food purchases). Students should identify and describe relevant factors of consumption behaviour. ▪ Students learn to understand and explain consumer behaviour on the basis of findings of actual consumer research. ▪ Knowledge about factors of consumption behaviour can be applied to the conceptualisation of communication measures (e.g. in counselling) or of marketing measures (e.g. in product development). 	
Contents: <ul style="list-style-type: none"> ▪ Households as business entities (status of private households in political economics, meaning of private consumption, economical explanatory approaches of consumption behaviour (utility theory, homo economicus, Lancaster). ▪ Decision behaviour (individual decision behaviour, group decisions, e.g. of private households). ▪ Psychological factors of consumer behaviour (system of psychological variables, activating determinants (emotion, motivation, attitude) and cognitive factors (perception, processing and memorisation of information). ▪ Environmental factors of consumer behaviour (system of environmental variables, social physical environment). 	

Module Name: Food Marketing	Lecturer: Prof. Dr. C. Wegmann
Course objectives: <ul style="list-style-type: none"> ▪ Comprehension of the food market. ▪ Students will get an insight into the development of integrated marketing concepts for food products. ▪ Students will gain knowledge in planning and implementation of marketing instruments for food products. ▪ Students will gain confidence for the assessment of advantages and disadvantages of options regarding the use of marketing methods. 	
Contents: <ul style="list-style-type: none"> ▪ Specifics of the food industry ▪ Direct sales of food products ▪ Cooperative marketing in the food sector ▪ Retail marketing in the food sector ▪ Advertising for food products ▪ Branding and package design ▪ Customer loyalty and customer satisfaction 	

Module Name: International Human Resource Management	Lecturer: Prof. Dr. A. Berger-Klein
Course objectives: <ul style="list-style-type: none"> ▪ To give an orientation in the field of International Human Resource Management ▪ How is Human Resource Management defined? ▪ What are the goals of HRM? ▪ What are the HRM activities? ▪ What are the processes that contribute to HRM activities? ▪ How HRM impacts on organizational performance? ▪ What is the context, in which HRM processes take place? 	
Contents: <ul style="list-style-type: none"> ▪ International Employee relations ▪ Organisational behaviour ▪ HRM – characteristics, impact and context ▪ Role of the HR function and the role of the HR practitioner ▪ Managing health and safety as a part of HRM ▪ Strategic HRM / HRM strategies ▪ HR policies ▪ Employee resourcing and human resource development ▪ Performance management 	

Course objectives:

- Students become acquainted with different research methods and strategies in quantitative and qualitative marketing research.
- Students will be able to evaluate alternative approaches and methodologies in marketing research.
- Students experience how to develop a research plan.
- Students learn to devise a research question and to develop questionnaires.
- Students develop the skills necessary to undertake marketing research and/or investigative activities within a business/management context, including project management.
- The project work gives students the opportunity to conduct a small research project.
- The field research enables students to gain insights in the practice of empirical research work, data analysis and report writing.
- The final presentation will help the students to develop their oral and presentation skills.

Contents:

- Structure of and criteria for good marketing research processes.
- Concept development, appropriateness of different research methods (survey, observation, experimental research).
- Measurement and scaling concepts, questionnaire design, sample designs and sample procedures.
- Transforming raw data into information, communicating research results, oral presentation and research report.

FOOD SCIENCES MODULES

Module name: German Food and Culture

Lecturer: Dipl. oec. troph. H. Koopmann

Course objectives:

- The Module contains a culinary journey throughout Germany.
- Students will find out about German favourite foods and beverages today and in the beginning of the last century.
- It will be reasoned in which way living and eating in Germany has changed and which international influence has taken place during the last 50 years.
- Students will prepare German traditional meals and will investigate the history of the recipes.

Contents:

- Development of consumer demand during the last century
- International Influences of eating behaviour in Germany
- Development of Food production and processing
- Regional differences in German culture
- Preparing of typical German dishes
- History of the recipes German traditional meals
- Market overview, consumption, price comparisons

Module name: International Food Regulations

Lecturer: Prof. Dr. J. Fritsche

Course objectives:

- Recognise and understand the structure, content and importance of national legal food regulations within the legal EU framework
- Apply basic food labelling requirement, e.g. compilation of ingredient lists, nutrient information labelling systems, health claims based on real-life studies
- Legal differentiation of foods and beverages, food supplements and drugs
- Identify and apply relevant food regulations
- Identify relevant food regulatory issues and contribute to solve regulatory issues (project team work)

Contents:

- Food Labelling (Codex Alimentarius, EU, USA)
- Health claim regulation processes in different international legal environments
- Regulatory differentiation of foods & beverages, food supplements and drugs

Module name: Nutritional Science Project

Lecturers: Prof. Dr. C. Behr Völtzer, Prof. Dr. M. Hamm

Course objectives:

- Current nutritional questions are handled
- Secondary investigation at the selective topic
- Analysis of collected information
- To apply the knowledge acquired e.g. in the form of a flyer, a poster, an exhibition etc.

Contents:

- Special subjects from the nutrition of healthy and ill people
- Investigation of information, literature study
- Preparation of materials, public relations, text layout

**Module name: Quality of Nutrition and Hygiene
in Catering Services**

Lecturer: Prof. U. Arens-Azevêdo

Course objectives:

- Students will be able to....
- Describe the mission statement of catering
- Evaluate the different specialised systems like cook and serve, cook and chill etc.
- Describe current and future equipment and decide the adequate technology based on the different demands of guests
- Develop and evaluate nutritional standards for consumers in different institutions
- Implement and control HACCP procedures
- Know the European regulations and how it works
- Implement quality assurance and improve continuously

Contents:

- The catering market in Europe and Germany
- Specialised Systems like cook and chill, cook and serve, cook and freeze, sous vide etc.
- Transport, storage and distribution of meals
- Menu planning and Convenience foods
- Basic conditions of food supply in different institutions like kindergarden, schools, nursing homes, canteens and hospitals.
- Development of specific nutritional standards
- Food and Nutrition Action Plan of Europe and Germany – consequences for catering
- Hygiene management and HACCP

Module name: Sensory Analysis

Lecturer: Prof. Dr. M. Busch-Stockfisch

Course objectives:

- Students will gain knowledge of sensory test methods.
- They will get familiar with planning, realisation and statistical analysis of sensory tests.
- Students will learn to apply sensory test results to product modifications.
- The course will present sensory analysis as a tool for quality management.

Contents:

- Requirements for setting up a sensory taste panel.
- Methods for sensory analysis of foods and statistical analysis.
- Setup of sensory sessions with application software.
- Preparation of sensory tastings including the relevant documentation.

PUBLIC HEALTH & NUTRITION MODULES

Module name: Eating Behaviour	Lecturers: Prof. Dr. J. Westenhöfer, S. Adam
Course objectives: <ul style="list-style-type: none"> ▪ To describe and evaluate methods to assess eating behaviour. ▪ To describe physiological, psychological, social and cultural determinants and consequences of eating behaviour and to evaluate scientific literature in this field. ▪ To develop, implement and to evaluate measures of health promotion and dietary interventions with special focus on overweight and eating disorders ▪ To describe and use methods of life-long learning in the field of eating behaviour 	
Contents: <ul style="list-style-type: none"> ▪ Scientific theories and models of nutritional psychology and nutritional sociology and applied methods in health promotion, counselling and therapy. ▪ Nutritional Psychology and nutritional Sociology: Principles of eating behaviour, methods to assess eating behaviour and nutritional status. ▪ Dietary interventions: Behavioural modification techniques in dietary interventions, quality management and evaluation. ▪ Applied nutritional psychology: Restrained eating, eating disorders and obesity: basic principles, prevention and therapy 	

Module name: Ergonomics with lab	Lecturers: Prof. Dr. G. Perger, F. Simon
Course objectives: <ul style="list-style-type: none"> ▪ Students gain methodological expertise through a combination of theoretical knowledge and hands-on, to professional routines related applications in the laboratory "work and health". ▪ Students acquire general competence by combining expertise on the systems Human – Health – Work, the social and psycho-social context with the development and encouragement of personal skills (independence, communication, cooperation, abstraction and social skills). 	
Contents: <ul style="list-style-type: none"> ▪ Stresses and strains (noise, mechanical vibrations, climate, lighting, lifting and carrying of loads, hazardous substances) ▪ Stresses and strains concepts, work related illness ▪ functional tests (audiometry, EMG, ECG, Ergo-Spitometry, biomechanics, visual test) ▪ Arranging the work place according to ergometric standards (anthropometrics + office working environment) 	

Module name: Public Health Nutrition	Lecturers: Prof. Dr. J. Westenhöfer, I. Borgmeier
Course objectives: <ul style="list-style-type: none"> ▪ To describe and assess the significance of nutrition for Public Health ▪ To use the Public Nutrition Action Cycle ▪ To read and understand nutritional epidemiological literature ▪ To understand the linkages between worldwide hunger and food markets ▪ To be able to discuss ecological changes and food production 	
Contents: <ul style="list-style-type: none"> ▪ Nutritional epidemiology: survey of the nutritional status, bio-statical methods, adjustment and revision methods, sources of error ▪ Important nutritional epidemiology studies: Framingham, Nurses Study, EPIC, Monica ▪ Public Health Nutrition Action Cycle ▪ Selective Public Health nutritional problems: supernutrition, malnutrition, heating circuit diseases, diabetes, cancer diseases ▪ Social status and food ▪ Global issues in relation to food 	

Module name: Public Health Project**Lecturers: Prof. C. Deneke, Prof. Dr. A. C. Seibt**

The topic for the summer semester 2009 is Studying Abroad an investigation of health-related well-being and conditions for both, foreign students staying in Hamburg, and HAW students planning an academic semester or an internship abroad.

Course objectives:

- Define a research question, research existing literature, and conduct an appropriate assessment of a public health-related topic
- Assess the underlying determinants/ prerequisites
- Conduct an adequate investigation
- Formulate an appropriate intervention policy, if applicable
- Publish the main findings of your investigation, e.g. by a public presentation or a handbook
- The main goal is to gain some intercultural competence by understanding other (university, scientific, student, young adult) cultures of different countries.

Contents:

- The Public Health Project is a practice-oriented project carried out by students. The project should be completed over the course of one semester. The first part of the course will be an introduction to basic concepts of health and health promotion.
- The project is empirically oriented; tasks like questionnaire design, pilot testing, interviewing, data analysis and some type of result presentation will be part of the course.
- The major content of the module are the experiences of intercultural understanding and more international competence and, last, but not least, worldwide fun!

Module name: Food Safety & Public Health Policy in Europe**Lecturer: Prof. Dr. R. Reintjes****Course objectives:**

- To understand basic structures for food safety and Public Health policy in Europe
- To get to know key players and their role in Europe (e.g. EFSA, ECDC, EC, National institutions).
- To learn how processes in health policy work.
- To learn what takes place in case of a food safety/public health crisis.

Contents:

- The EU quiz
- DG Sanco / DG for Health Consumers
- General Food Law
- EFSA, The European Food Safety Authority
- ECDC, The European Centre for Disease Prevention and Control
- EU Member States
- The Melamine case
- Dioxine scandals
- Crisis Exercise with role play

GENERAL MODULES

Module name: Academic English"	Lecturer: Visiting lecturer from "Uni-Sprachkurse"
Course objectives: To broaden the participants' knowledge of more challenging academic / scientific texts, and to enable students to present their work, both written and spoken, in a more sophisticated form.	
Contents: Students should be able to: <ul style="list-style-type: none"> ▪ Understand the use of English in an academic setting; be involved in professional communications ▪ Make use of scientific literature; use acquired skills to give presentations ▪ Realise the fun element in communicating in English 	

Module name: Survival German	Lecturer: Visiting lecturer from "Uni-Sprachkurse"
Course objectives: Students <ul style="list-style-type: none"> • Become acquainted with the German language; learn to cope with things of everyday life • Go food shopping or the like together 	
Contents: <ul style="list-style-type: none"> • Elementary German; simple phrases, questions and responses from everyday life 	

Module Name: Project Management	Lecturer: Prof. Dr. C. Wegmann
Course objectives: <ul style="list-style-type: none"> ▪ To plan separate projects and to apply the instruments of the project management ▪ To work as a project manager in a small up to middle-sized projects ▪ To work client orientated in projects ▪ To recognise critical situations in the project management 	
Contents: <ul style="list-style-type: none"> ▪ Specific aims and outline of purposes ▪ Context analysis ▪ Project workflow planning with critical path method ▪ Capability planning ▪ Cost planning ▪ Project organisation ▪ Project controlling ▪ Leadership and conflicts, profile of qualification ▪ Use of software and project management 	

Module name: Working in Multicultural Groups	Lecturer: Prof. H. Helker
Course objectives: <ul style="list-style-type: none"> ▪ Repetition and immersion of classic methods of group work and their application in a multicultural context. ▪ Course objective is to raise the students' level of awareness of the differences in communicative practices in different cultures and the consequences these differences might have in intercultural communication. ▪ The course will encourage the students to be critical about stereotypes in language and thinking. The course will help students to identify and understand the meaning of multiculturalism as a process in team building and work in a multicultural working environment. 	
Contents: <ul style="list-style-type: none"> ▪ Applying classic techniques of group work, the course looks into the development of practical skills. ▪ Theory and practice of team management – team building, leading, conflict management. ▪ Theory of cultural differences in communicative practices taking into account both verbal and non-verbal communication. 	

Life Sciences Engineering – Modules

Module name: Sustainable Solid Waste Management
ECTS : 5

Lecturer: Prof. Dr. Kerstin Kuchta

This course aims to provide an overview of the fundamental concepts pertaining to the management and treatment of solid and hazardous waste. Students will look at the technologies employed in the treatment of different wastes. Topics covered include the sources and characteristics of solid waste, its collection, transfer and transport. Aspects of recycling, reuse and recovery, with a focus on the appropriate treatment technologies for both solid and hazardous waste will also be explored.

Module name: Fuel Cells – an introduction
ECTS : 2.5

Lecturer: Prof. Dr. Marion Siegers

This course deals with fuel cell systems and their application. After discussing the basics of a fuel cell in general, the course will look at the fuel gas supply (like reformer technology, CO removal technology and internal reforming). Students will also be introduced to automotive, stationary and portable applications of fuel cells.

Module name: Thermal Separation Processes
ECTS : 2.5

Lecturer: A. Sievers

- How can we separate molecular components from liquid mixtures?
- How can we calculate the separation efficiency and the energy demand of such separation processes?
- What kind of apparatus and technologies are on the market to separate liquid mixtures?

Recommended for students in the fields of chemical engineering, process engineering or environmental engineering (2nd / 3rd year).

Module name: Particle Technology
ECTS : 3

Lecturer: Prof. Dr. Martin Geweke

- How big is a particle?
- How can we describe the shape of particles and how are we able to measure them?
- What kind of technologies are on the market to separate particles and to remove dust from process air?

Recommended for students in the fields of chemical engineering, process engineering or environmental engineering (2nd / 3rd year).

Module name: Applied Limnology ECTS : 5	Lecturer: Prof. Dr. Dieter Jaeger
<ul style="list-style-type: none"> • Structure and properties of water, physical impacts to standing surface water bodies, e.g. solar radiation and heat • Worldwide classification of standing waters after amount and intensity of circulation and stagnation periods • Reasons and degree of water acidification • The global C-, N- and P-cycles and their application in technical processes, e.g. waste composting or waste water treatment • Process, degree and classification of eutrophication in standing surface waters, using different chemical, biological and mathematical modules • Lake external and internal measures to avoid or decrease eutrophication, e.g. advanced waste water treatment, aeration of deep water layers • Reasons, degree and impacts of pollution to standing surface waters, measures to decrease this problem • Discussion of worldwide projects to understand the local problems, the scientific approach and investigation programmes, estimation of the damage degree, finally the natural science based methods to improve the water quality <p>Prerequisites: Biology, Chemistry 1 and 2, Physics 1 and 2, Biological and Chemical Parameters of Environmental Analysis</p>	

Module name: Materials Science ECTS : 5	Lecturer: Prof. Dr. Bernd Sadlowsky
<p>Course objectives:</p> <p>Students develop an understanding between internal structure, internal mechanisms and externally measurable material properties. They become acquainted with the most important material test procedures and the significance of the mechanical properties of materials and on this basis they are able to compare materials in relation to their suitability for a construction or manufacturing process. They also learn about the basic principles for the formation and influence of microstructures in metallic materials in solidification and heat treatment applications.</p> <p>Course content:</p> <ul style="list-style-type: none"> • Construction of materials: atomic and molecular structure, bonds and principal material groups. • Principles of metallurgy: crystalline structure, material defects, thermally activated processes, alloys and corrosion. • Ferrous metals: iron-carbon system, heat treatment, alloy elements, steel types and nomenclature, steel manufacturing, processing and application, cast iron materials. • Non-ferrous metals: aluminium, copper, nickel and titanium. • Plastics: structure, properties, plastic types, plastics nomenclature, plastics manufacturing, processing and application. • Principles of mineral, non-metallic materials: ceramics and glass. • Destructive materials testing: tensile test, pressure test, impact test, fatigue test, metallographic analysis, scanning electron microscopic analysis, EDX analysis and spectral analysis. • Non-destructive materials testing: visual inspection, dye penetrant testing, ultrasonic testing, radiographic examination, acoustic emission testing and replica technology. • Damage analysis: damage investigation procedure based on visual, metallographic and fractographic analyses and group work. 	