Module handbook
Bachelor of Science
Nutrition, Health, Food Business

Examination regulations 2013

Hochschule Fulda
University of Applied Sciences
Nutritional Sciences I – Nutritional Physiology

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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<tbody>
<tr>
<td>OE-BS-EPH</td>
<td>135 hours divided in</td>
<td>5</td>
<td>1st</td>
<td>Winter semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 90 in-class hours</td>
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<tr>
<td></td>
<td>• 45 hours self-study</td>
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</table>

<table>
<thead>
<tr>
<th>Module-type</th>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory in the BSc Oe:EGL and BSc Oe:VVM</td>
<td>Bachelor</td>
<td>German</td>
</tr>
</tbody>
</table>

1 Qualification objectives
The module enables students to science-based thinking and to use basics of the human biology regarding Nutritional, Food and Consumer Sciences (Nutritional, Food and Consumer Sciences). The main emphasis is on the development of an understanding of anatomy and of physiological processes particular in the gastrointestinal tract. The students are able to:
- describe the anatomy and physiology of various organ systems (e.g. cardiovascular system),
- describe the macro- and microanatomy of the gastrointestinal tract and to establish connections between specific functions,
- explain the processes of digestion and resorption of nutrients in detail,
- outline the fundamental principles of metabolism control and coordination,
- interpret exemplary pathophysiological processes,
- apply fundamental laboratory methods and to execute and to document experiments according to operating instructions and to evaluate the findings,
- use the knowledge of nutritional physiology to critical reflect health-related statements.

2 Content of the module
Anatomy and physiology of selected organ systems
- Gastrointestinal tract as a functional unit
- Digestion and reabsorption of nutrients
- Microbiological colonisation of the gastrointestinal tracts
- Biological information transmission and information processing
- Sensory perception smell and taste
- Examples of the effects on malfunctions on single organ systems as well as on the whole organism

3 Teaching methods
- 1 SWS lecture Anatomy/Physiology
- 2 SWS lecture Nutritional Physiology
- 2 SWS laboratory exercise Nutritional Physiology or Anatomy

4 Requirements for participation
None

5 Requirements for receiving credits:
Laboratory reports (Anatomy/Physiology or Nutritional Physiology); passed module examination

6 Usability of the module
Compulsory module in the BSc Oe:EGL and BSc Oe:VVM

7 Examination type
Written examination

8 Remarks

9 Methods of assessment
Grading

10 Responsible for the module
Chair of Nutritional Physiology – Human Nutrition – Nutrition in prevention and during illnesses
### Fundamentals of Nutritional and Food Sciences

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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<tr>
<td>OE-BS-CBI</td>
<td>270 hours divided in</td>
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<td>1st semester</td>
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<tr>
<td></td>
<td>• 162 in-class hours</td>
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<td></td>
<td>• 108 hours self-study</td>
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#### Module-type

Compulsory in the BSc Oe:EGL and BSc Oe:VVM

#### Level of the module

Bachelor

#### Language

German

### 1 Qualification objectives

The students are able to:

- apply the fundamentals of biology, biochemistry and chemistry, which are significant for the understanding of the biological system relevant to food, nutritional and environmental sciences,
- appropriately apply the periodic system of chemical elements and comprehend nature as a material world,
- become familiar with important chemical compounds and understand important chemical reactions,
- understand important analytical procedures,
- understand the biological and chemical processes important for the human body and the primary production and material cycles in the environment, including those for the production and processing of food products,
- develop goal-oriented knowledge in self-studies and project work from the subject literature related to biology (including raw material science), biochemistry and chemistry, which is important for Nutritional, Food and Consumer Sciences,
- apply the acquired knowledge in solving simple problems, which are related to the biological system and raw materials introduced in the basic studies.

After participation in the laboratory exercises, students can:

- Perform laboratory work following essential safety requirements,
- Independently prepare and conduct experiments and experimental procedures using the taught techniques,
- Observe, estimate, record and interpret results.

### 2 Content of the module

- Atomic structure and chemical bonds
- Application of the law of mass action; properties and reactions of acids and bases
- Basic chemical reactions (redox reactions, reactions of organic compounds)
- Chemical classes in organic chemistry; optical activity
- Structure and characteristics of biological macromolecules: carbohydrate, lipids, nucleic acids, proteins
- Function of proteins (overview, structure-functions relationship on the basis of examples)
- Flow of the genetic information: replication, transcription, translation.
- Introduction in the energy metabolism: glycolysis, citrate cycle, electron transport and oxidative phosphorylation
- Fundamentals of signal transduction; hormones
- Fundamentals of biochemical methods: protein isolation, protein characterisation, enzyme kinetics. Basic laboratory techniques; laboratory safety requirements
- Fundamentals of analysis and selected methods when examining food products
- Cells and cellular processes, tissue
- Material and energy balance in the ecosystem
- Biological fundamentals of the production of plant foods
- Biological fundamentals of the production of animal foods

### 3 Teaching methods

- 6.75 SWS lecture
- 1 SWS exercises (only degree programme BSc Oe:VVM)
- 2.25 SWS laboratory exercises Chemistry and Biology (only degree programme BSc Oe:EGL)
- 2 SWS laboratory exercises Chemistry and Biology (only degree programme BSc Oe:VVM)
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<tr>
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<tbody>
<tr>
<td>4</td>
<td>None</td>
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<tr>
<td>5</td>
<td>Requirements for receiving credits</td>
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<td></td>
<td>Laboratory report; passed module examination</td>
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<tr>
<td>6</td>
<td>Usability of the module</td>
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<td>Compulsory in the BSc Oe:EGL and BSc Oe:VVM</td>
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<td>Examination type</td>
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<td></td>
<td>Written examination</td>
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<td>8</td>
<td>Remarks</td>
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<tr>
<td>9</td>
<td>Methods of assessment</td>
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<td>Grading</td>
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<td>10</td>
<td>Responsible for the module</td>
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<td></td>
<td>Chair of Nutritional and Food Quality</td>
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</table>
Study Project

Module-Workload-ECTS-Credits-Semester-Frequency-offered-Course-length
number-number-number-number
OE-BS-PRO 405 hours divided in 233 in-class hours 172 hours self-study 15 1st-3rd semester Every semester 3 semester

Module-type
Compulsory in the BSc Oe:EGL and BSc Oe:VVM

Level of the module
Bachelor

Language
German

1 Qualification objectives
The students are able to:
- apply the methods of project management, to work together on a project and to complete it,
- apply the scientific approach and become familiar with interdisciplinary issues,
- reflect the teamwork and the communication within the project team,
- identify and describe problems of a project related to Nutritional, Food and Consumer Sciences, and to develop proposals for solutions and convert them into action.

2 Content of the module
- Project definition
- Work in a project
- Selection and assessment of a project topic
- Project planning: goal, work schedule, milestones, finance plan
- Management of the project team, roles in the team, moderation
- Techniques for retrieval and evaluation of information
- Good scientific practice, ethical principles, information of clients
- Presentation of the project work to different audience (project, department and project partners)
- Implementation of a project
- Evaluation of a project
- Reflection of the project work
- Project completion including documentation

3 Teaching methods
- 1 SWS lecture
- 1 SWS exercise
- 1 SWS seminar
- 10 SWS project

4 Requirements for participation

5 Requirements for receiving credits
Portfolio examination, including written status reports at the end of semester 1 and 2; presentation of the project work during "project fair"; final report at the end of the 3rd semester; passed module examination

6 Usability of the module
Compulsory in the BSc Oe:EGL and BSc Oe:VVM

7 Examination type
Portfolio examination

8 Remarks

9 Methods of assessment
Grading

10 Responsible for the module
Study Dean
Fundamentals of Social Sciences

<table>
<thead>
<tr>
<th>Module-number</th>
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<th>ECTS-Credits</th>
<th>Semester</th>
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<td>OE-BS-SIO</td>
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1 Qualification objectives
Students should learn to understand that nutrition and food are not only physiological processes, but that these are determined by cultural, social, and psychological determinants and can be changed. The students are able to:
- outline the cultural-specific characteristics of food and nutrition and to state the basics of culture-specific interventions,
- outline the fundamentals in the sociology of food and nutrition,
- classify the relevance lifestyle-specific foods and societal roles of food,
- reflect the societal roles of Nutritional, Food and Consumer Science (Nutritional, Food and Consumer Sciences),
- explain “normal” and impaired eating behaviours and to outline solution approaches to change impaired eating,
- describe central, psychological schools and psychological personality approaches, those of which are relevant for a future career,
- explain the interrelations between psyche and eating behaviour,
- deepen their competencies in social sciences independently.

2 Content of the module
- Introduction to Sociology
- Introduction to Nutrition Psychology
- Social roles and responsibility of Nutritional, Food and Consumer Sciences
- Connections between nutrition and cultural sciences
- Introduction to intervention methods of Nutritional, Food and Consumer Sciences

3 Teaching methods
- 1 SWS lecture
- 2 SWS seminar
- 2 SWS exercise

4 Requirements for participation

5 Requirements for receiving credits
Work on practical examples in exercises; passed module examination

6 Usability of the module
Compulsory in the BSc Oe:EGL, BSc Oe:VVM and BSc Dietetics.

7 Examination type
Oral examination

8 Remarks
The module provides fundamental knowledge important for the successful further modules regarding social sciences.

9 Methods of assessment
Grading

10 Responsible for the module
Chair of Health Psychology – Nutrition Psychology – Psychotherapy
Economics I: Principles of Economics

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
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<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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<tr>
<td>OE-BS-W11</td>
<td>135 hours divided in 72 in-class hours, 63 hours self-study</td>
<td>5</td>
<td>1st semester (EGL, VVM); 7th semester (Dietetics)</td>
<td>Winter semester</td>
<td>1 semester</td>
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Module-type: Compulsory in the BSc Oe:EGL, BSc Oe:VVM and BSc Dietetics

Level of the module: Bachelor

Language: German

1 Qualification objectives

Students will gain fundamental, technical, and methodological knowledge on business and Macro Economics and are able to provide solutions to simple issues relevant to Nutritional, Food and Consumer Sciences. The use of qualified teaching techniques enables the students to gain additional competencies in the fields of communication, organisation of their work processes and abilities to solve economic tasks. The students are able to:
- classify and characterise business and Macro Economics,
- describe political and economic relations,
- explain the organisation as a productive, social system,
- describe the specific methods of business economics and can apply fundamental methods in simple systems,
- classify and systemise the organisations in the food industry,
- demonstrate knowledge and understanding the simple and expanded system of production,
- describe and explain the fundamental goals and objectives of organisations,
- understand and apply fundamental, operational key figures,
- understand location decisions,
- name the legal structure of organisations and state advantages and disadvantages,
- communicate in working groups in a goal-oriented way, solve tasks and present.

2 Content of the module

- market economy, market, and society
- nature of the economy, organisations, and companies
- basic terminology of Macro Economics
- business economics as an applied science
- orientation and methods of business economics
- types of organisations, industries, and the different economic levels
- factors of production
- goals and objectives
- operational key figures
- factors of location decisions
- forms of companies

3 Teaching methods

- 2 SWS Lecture
- 2 SWS Exercise

4 Requirements for participation

None

5 Requirements for receiving credits

Work on examples in exercises in single, partner and group works; presentation of the results; passed module examination

6 Usability of the module

Compulsory in the BSc Oe:EGL and BSc Oe:VVM.
<table>
<thead>
<tr>
<th></th>
<th>Examination type</th>
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<tbody>
<tr>
<td>7</td>
<td>Written examination</td>
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<tr>
<td>8</td>
<td>Remarks</td>
</tr>
<tr>
<td></td>
<td>The module provides fundamental knowledge important for the successful participation in further modules in economics.</td>
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<tr>
<td>9</td>
<td>Methods of assessment</td>
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<td>Grading</td>
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<tr>
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<td>Chair of Economics – Macro-Economics – Business Information Systems</td>
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## Research Methods I

<table>
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<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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<tr>
<td>OE-BS-FM1</td>
<td>135 hours</td>
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<td>2nd semester (EGL, VVM); 1st semester (Dietetics)</td>
<td>Summer sem. (EGL, VVM); Winter semester (Dietetics)</td>
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<td></td>
<td>- 90 in-class hours (BSc Dietetics: incl. online-presence)</td>
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<td>- 45 hours self-study</td>
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### Module-type

Compulsory in the BSc Oe:EGL, BSc Oe:VVM and BSc Dietetics

### Level of the module

Bachelor

### Language

German

1 **Qualification objectives**

Students will become familiar with fundamental, interdisciplinary, essential techniques in the approach to research findings and their application as well as to work independently scientifically. The students are able to:

- name fundamentals of scientific working and to describe the criteria of good scientific practices,
- explain why the criteria of scientific working are relevant for the students own work (at the university or later in working life),
- understand epistemological models and models of philosophy of science,
- classify and to oppose fundamental concepts and methods of quantitative and qualitative research,
- describe hypothesis testing and hypothesis generating, qualitative and quantitative research designs,
- plan basic, scientific questions/studies,
- select empirical methods for issues of Nutritional, Food and Consumer Sciences, to apply them as well as to assess their significance,
- discuss the requirements and limitations of empirical assertions.

2 **Content of the module**

- Fundamentals of the theory and philosophy of science
- Criteria of scientific working and good scientific practices
- Examples of application and practice of science and research
- Introduction to empiricism
  - Formation of hypotheses
  - Samples and sampling methods
  - Planning of surveys, research designs (quantitative und qualitative)
  - Structuring of questionnaires
  - Different survey methods (e.g. interviews, biological material)
  - Preparation of measured data, determination of variables, application of scales
  - Interpretation and evaluation of findings of empirical studies

3 **Teaching methods**

- 2 SWS lecture
- 2 SWS seminar
- 1 SWS exercise

4 **Requirements for participation**

None

5 **Requirements for receiving credits**

Completion of exercises; passed module examination

6 **Usability of the module**

Compulsory in the BSc Oe:EGL, BSc Oe:VVM and BSc Dietetics.

7 **Examination type**

Written examination

8 **Remarks**

Lecture content is required for the participation in Research Methods II. Basic module for all Bachelor programmes

9 **Methods of assessment**

Grading

10 **Responsible for the module**

Chair of Nutritional Epidemiology – Preventive Strategies (ad interim)
# Culture, Nutrition, Sustainability

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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<tr>
<td>OE-BS-KEN</td>
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<tr>
<td></td>
<td>• 72 in-class hours</td>
<td></td>
<td></td>
<td>7th semester (Dietetics)</td>
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<tr>
<td></td>
<td>• 63 hours self-study</td>
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<td>Summer sem. (EGL, VVM); Winter semester (Dietetics)</td>
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</tbody>
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## Module-type
- Compulsory in the BSc Oe:EGL, BSc Oe:VVM and BSc Dietetics

## Level of the module
- Bachelor

## Language
- German/English

### 1 Qualification objectives
The students are able to:
- explain the relationship between food products/ nutritional behaviour and cultural, influential factors,
- outline food patterns, which result in current nutritional behaviour,
- apply principles of historiographical research,
- explain mentalities regarding ingestion,
- identify and to some extent modify cultural factors of influence in their further professional life,
- outline the principles of lifestyle research and to analyse lifestyles,
- assess the impact of different nutritional behaviours on environment and society,
- develop goal-oriented knowledge in self-studies from the subject that is important for Nutritional, Food and Consumer Sciences.

### 2 Content of the module
- Culture and Nutrition
- Introduction to lifestyle research
- Health and nutritional behaviour
- Intercultural comparison of food patterns
- Definition and history of the term “sustainability”
- Impact of different nutritional behaviours on environment and society

### 3 Teaching methods
- 1 SWS lecture
- 1 SWS seminar
- 2 SWS exercise

### 4 Requirements for participation
Contents of the modules "Fundamentals of social sciences, fundamentals of nutritional and food sciences; nutrition I and II; Fundamentals of economics"

### 5 Requirements for receiving credits
Work on practical examples in exercises; passed module examination

### 6 Usability of the module
Compulsory in the BSc Oe:EGL, BSc Oe:VVM and BSc Dietetics.

### 7 Examination type
Written examination

### 8 Remarks
The module is fundamental to understand systems of nutrition and food production. Hence it is a basis for modules in further semesters. It qualifies for a relevant function occupied during the compulsory internship.

### 9 Methods of assessment
Marking

### 10 Responsible for the module
Chair of Health Psychology – Nutrition Psychology – Psychotherapy
## Food Science I: Processed Food Products

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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</table>
| OE-BS-LMB     | 135 hours divided in:  
• 81 in-class hours  
• 54 hours self-study | 5 | 2nd semester | Summer semester | 1 semester |

### Module-type
- Compulsory in the BSc Oe:EGL and BSc Oe:VVM
- Level of the module: Bachelor
- Language: German

### 1 Qualification objectives
The students are able to:
- outline the criteria for the evaluation of the quality of processed food products,
- name the fundamental processes of food processing,
- explain the chemical composition of food, the changes due to processing and storage, including the effects of additives,
- know the physiological basis of sensory analysis,
- apply the sensory testing procedures and to evaluate the results,
- expand their knowledge in food sciences in self-studies and project work in groups, using pertinent literature,
- apply the knowledge to the evaluation of food quality, for example in product development and quality management.

### 2 Content of the module
- Properties of lipids, proteins, carbohydrates, vitamins, minerals, secondary plant materials in food products; chemical and microbiological changes; roles of enzymes in food products; production and application of aromatic substances in food products; application and properties of food additives
- Sensory analyses – Relevance and requirements, fundamental physiological senses associated with food sensory evaluation, sensory test procedures, evaluation of results
- Principles of the manufacturing of selected food products.

### 3 Teaching methods
- 3 SWS lecture
- 1.5 SWS laboratory exercise
- 1 SWS exercise

### 4 Requirements for participation
Recommended: Contents of the module “Fundamentals of Nutritional and Food Sciences”

### 5 Requirements for receiving credits
Laboratory report; passed module examination

### 6 Usability of the module
Compulsory in the BSc Oe:EGL and BSc Oe:VVM

### 7 Examination type
Written examination

### 8 Remarks

### 9 Methods of assessment
Grading

### 10 Responsible for the module
Chair of Microbiology – Food technology
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## Technology I

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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<tr>
<td>OE-BS-PHT</td>
<td>135 hours divided in: • 81 in-class hours • 54 hours self-study</td>
<td>5</td>
<td>2nd semester</td>
<td>Summer semester</td>
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<td>Bachelor</td>
<td>German</td>
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</table>

1. **Qualification objectives**
   
   The students are able to:
   
   - apply fundamental physical and technical regularities,
   - outline households as operators of technical equipment and users of resources,
   - understand the physical system of measurement (SI units),
   - understand physical and technical coherences in the different fields of Nutritional, Food and consumer sciences,
   - perform simple calculations in the subjects of energy/heat quantity, behaviours of liquids/gases, sound and light,
   - evaluate large household equipment from technical, ecological and economical aspects,
   - name energy sources and to explain losses from energy conversion,
   - conduct simple physical/technical experiments, including documentations and interpretations.

2. **Content of the module**
   
   - Physical fundamentals
   - System of SI units
   - Mass-force-work-output
   - Hydrostatics, buoyancy, air pressure, absolute and relative pressure
   - Ideal and actual behaviours of gases
   - Forms of energy, heat quantity/enthalpy
   - Properties of electromagnetic radiation/light
   - Proliferation and measurement of sound
   - Technology and the environment
   - Consumption and emissions of resources through private households
   - Construction and utilization of different household appliances
   - Costs and life cycle assessment for household appliances
   - Criteria for the selection of household appliances
   - Conception and utilisation of product testing

3. **Teaching methods**
   
   - 2 SWS lecture
   - 1 SWS exercise
   - 1,5 SWS laboratory exercises, optional Physical Measurement Techniques or Measurement Techniques for Household Appliances and Living Spaces

4. **Requirements for participation**
   
   None

5. **Requirements for receiving credits**
   
   Laboratory report; passed Module examination

6. **Usability of the module**
   
   Compulsory in the BSc Oe:EGL and BSc Oe:VVM.

7. **Examination type**
   
   Written examination

8. **Remarks**
   
   The module provides fundamental knowledge important for the successful participation in the technological modules of the second stage of studies.

9. **Methods of assessment**
   
   Grading

10. **Responsible for the module**
    
    Chair of Physics and Technology
### Economics II: Business Administration

<table>
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<tr>
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<tr>
<th>Workload</th>
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<td>German/ English</td>
</tr>
</tbody>
</table>

1 **Qualification objectives**

The students gain fundamental subject-specific and methodological knowledge in the field of Business Administration and are able to apply this knowledge in economic practice.

The students are able to:
- state the tasks of leadership and management,
- understand the decision-making in an operation and can comprehend and explain the decisions,
- identify and to solve target conflicts within the operational system,
- name the main features of the organisation of operations (organisational and operational structure),
- explain the fundamentals of production management, materials management and logistics and to adapt them in practical examples,
- understand the tasks of human resource management and to adapt them in practical examples,
- understand the relationship between investment and financing,
- explain the information-gathering of the business in the main features in its fundamentals,
- explain the specifics of an operation in the food industry,
- outline the aspects of international and intercultural business operation,
- develop economic decision making in work teams, to analyse their impacts and to adjust new scopes.

2 **Content of the module**

- Leadership and management tasks, management styles
- International business operation
- Decision process in an operation
- Operational functions:
  - Organisation (organisational and operational structure)
  - Materials Management
  - Production and Services
  - Sales
  - Human resource management
  - Accounting and Financing
  - Information gathering
- Characteristics of an operation in the food industry

3 **Teaching methods**

- 2 SWS lecture
- 2 SWS exercise

4 **Requirements for participation**

Contents of the module Principles of Economics

5 **Requirements for receiving credits**

Work on examples in exercises (individually, in pairs or groups); presentation of the results; passed Module examination.

6 **Usability of the module**

Compulsory in the BSc Oe:EGL and BSc Oe:VVM.
<table>
<thead>
<tr>
<th></th>
<th>Examination type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Written examination</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td><strong>Remarks</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>The module provides fundamental knowledge important for the successful participation in the economic modules of following semesters.</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td><strong>Methods of assessment</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Grading</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td><strong>Responsible for the module:</strong> Chair of Economics – Macro Economics – Business Information Systems</td>
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</tbody>
</table>
## Nutrition II – Human Nutrition

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-HME</td>
<td>135 hours divided in</td>
<td>5</td>
<td>3rd</td>
<td>Winter semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 58 in-class hours</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>• 77 hours self-study</td>
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</tr>
</tbody>
</table>

### Module-type
- Compulsory in the BSc Oe:EGL

### Level of the module
- Bachelor

### Language
- German

### Qualification objectives
The module qualifies students to take science-based action in human nutrition in accordance with national and international standards. The students are able to:
- characterise the energy balance and metabolism of major nutrients and deduce consequences for the nutritional status,
- explain the basic biochemical processes involved in nutrition,
- apply dietary reference values for nutrient intakes and to characterise studies on the current supply situation of energy and nutrients,
- realise nutrition surveys and to name specific problems,
- analyse nutritional protocols using current nutritional software; to apply nutritional reference values with their health-related targets and optimise nutrition plans,
- identify and to name problems with the supply of energy, food and nutrients and develop solutions for nutrient management,
- recognise their design options and their responsibility in food systems and in product development (technical ethics).

### Content of the module
- nutritional biochemistry: biosynthesis and degradation of carbohydrates fatty acids and amino acids biosynthesis of cholesterol
- hormonal, neural, and endocrine regulation of food intake
- body composition and nutritional status
- nutrient recommendations of national and international scientific committees
- energy and water homeostasis
- fibre
- metabolism of carbohydrates, lipids, and proteins, as well as consequences of an excessive or decreased supply
- nutrition surveys and use of nutrition software

### Teaching methods
- 1,5 SWS lecture Fundamentals of Biochemistry
- 2 SWS lecture Nutrition Physiology
- 1 SWS laboratory exercises Nutrition Surveys

### Requirements for participation
- Contents of the module Fundamentals of Nutritional and Food Sciences

### Requirements for receiving credits
- Written documentation, analysis and evaluation of nutrient protocols; passed module examination

### Usability of the module
- Compulsory in the BSc Oe:EGL

### Examination type
- Written examination

### Remarks
- The module provides fundamental knowledge important for the successful participation in the nutrition-related modules of following semesters

### Methods of assessment
- Grading

### Responsible for the module
- Chair of Nutritional Physiology – Human Nutrition – Nutrition in Prevention and in Disease
## Research Methods II

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-FM2</td>
<td>135 hours, divided in</td>
<td>5</td>
<td>3rd semester</td>
<td>Winter semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>- 90 in-class hours (BSc Dietetics: incl. online-presence)</td>
<td></td>
<td>(EGL, VVM); 2nd semester</td>
<td>(EGL, VVM); Summer sem. (Dietetics)</td>
<td></td>
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<tr>
<td></td>
<td>- 45 hours self-study</td>
<td></td>
<td>(Dietetics)</td>
<td>(Dietetics)</td>
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</tbody>
</table>

### Module-type

- Compulsory in the BSc Oe:EG, BSc Oe:VVM and BSc Dietetics

### Level of the module

- Bachelor

### Language

- German

### Qualification objectives

The students gain specialised, interdisciplinary and methodological competencies regarding the handling of statistical practices to work scientifically and independently. The students are able to:
- apply fundamental methods of descriptive statistics and to interpret findings,
- apply fundamental methods of evaluative statistics and to interpret findings,
- apply fundamental methods of qualitative data analysis and to interpret findings,
- understand the uncertainty of (measurement) results,
- outline data analysis and data evaluation in the field of Nutritional, Food and Consumer Sciences and to apply them exemplary,
- apply statistics software.

### Content of the module

**Fundamentals of Statistics**
- Basic population and sample, definition of characteristics
- Descriptive parameters (sum parameter, range of dispersion)
- Importance of probabilities and its handling
- Empirical distribution, (distribution models, normal distribution)
- Display statistical evaluation (tables, graphs, …)
- Interpretation of data

**Fundamentals of evaluative statistics**
- Statistical test, null hypothesis, decisional error of first and second kind
- Test distributions (examples: t-distribution, χ²-distribution)
- Test procedures (examples: test to find out the compliances of mean values and frequencies)
- Regression analysis and correlations
- Uncertainty of (measurement) results
- Parameter free tests
- Basic principles of Bayes statistics
- Interpretation analysis results

**Fundamentals of qualitative data analysis, e.g.**
- Grounded theory
- Analyses of contents
- Case interpretation
- Application of statistic software

### Teaching methods

- 1 SWS lecture
- 2 SWS seminar
- 2 SWS exercises

### Requirements for participation

Contents of the module Research Methods I

### Requirements for receiving credits

Work on exercises; passed module examination

### Usability of the module

Compulsory in the BSc Oe:EG, BSc Oe:VVM and BSc Dietetics.
<table>
<thead>
<tr>
<th></th>
<th>cont. – Research methods II</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Examination type</td>
</tr>
<tr>
<td></td>
<td>Written examination</td>
</tr>
<tr>
<td>8</td>
<td>Remarks</td>
</tr>
<tr>
<td></td>
<td>Basic module for all Bachelor programmes</td>
</tr>
<tr>
<td>9</td>
<td>Methods of assessment</td>
</tr>
<tr>
<td></td>
<td>Grading</td>
</tr>
<tr>
<td>10</td>
<td>Responsible for the module(r)</td>
</tr>
<tr>
<td></td>
<td>Chair of Physics and Technology</td>
</tr>
</tbody>
</table>
### Fundamentals of Communication and Counselling

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
</table>
| OE-BS-KUB     | 135 hours divided in  
- 72 in-class hours  
- 63 hours self-study | 5 | 3rd semester (EGL)  
4th semester (VVM) | Every semester | 1 semester |

#### Module-type
- Compulsory in the BSc Oe:EGL and BSc Oe:VVM

#### Level of the module
- Bachelor

#### Language
- German

<table>
<thead>
<tr>
<th>Requirement objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>The students are able to:</td>
</tr>
<tr>
<td>- explain principle communication theories,</td>
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<tr>
<td>- analyse their own communication behaviour in the context with others,</td>
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<tr>
<td>- identify and to develop specific communication structures at future working places,</td>
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<tr>
<td>- appropriately apply the fundamentals of counselling techniques,</td>
</tr>
<tr>
<td>- explain different kinds of interventions in nutritional education and counselling (clarification, education, prevention, health promotion, training, therapy, rehabilitation),</td>
</tr>
<tr>
<td>- implement interventions for nutritional education and counselling,</td>
</tr>
<tr>
<td>- educate oneself further in nutritional education and counselling,</td>
</tr>
<tr>
<td>- act setting-related and target-group-specific in counselling,</td>
</tr>
<tr>
<td>- critical reflect and to develop further their own communication behaviour.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content of the module</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Communication theories</td>
</tr>
<tr>
<td>- Communication in counselling, marketing and public relations</td>
</tr>
<tr>
<td>- Counselling psychology</td>
</tr>
<tr>
<td>- Interventions and effects: from clarification through to therapy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Teaching methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>- 2 SWS lecture</td>
</tr>
<tr>
<td>- 2 SWS exercise</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Requirements for participation</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Requirements for receiving credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work on practical examples in exercises; passed module examination</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Usability of the module</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory module in BSc Oe:EGL and BSc Oe:VVM.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Examination type</th>
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</thead>
<tbody>
<tr>
<td>Oral examination</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Remarks</th>
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</thead>
<tbody>
<tr>
<td>Basis for the modules marketing, press, public relations; nutrition and diseases; preventive nutrition; clinical nutrition</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Methods of assessment</th>
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</thead>
<tbody>
<tr>
<td>Grading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Responsible for the module</th>
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</thead>
<tbody>
<tr>
<td>Chair of Health Psychology – Nutrition Psychology – Psychotherapy</td>
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</table>
## Food Science II: Food Safety and Microbiology

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-LSM</td>
<td>135 hours divided in &lt;br&gt;81 in-class hours &lt;br&gt;54 hours self-study</td>
<td>5</td>
<td>3rd semester</td>
<td>Winter semester</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module-type</th>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory in the BSc Oe:EGL</td>
<td>Bachelor</td>
<td>German</td>
</tr>
</tbody>
</table>

### 1 Qualification objectives
The students are able to:
- characterise the hazards and adverse effects resulting from contamination of food by toxins, residues, and micro-organisms, as well as the principles of risk management at various stages of the food chain,
- apply the acquired knowledge and skills to the control of hazards in the commercial and household-scale processing of food (e.g. by design of appropriate control plans and measures), and to the preservation of food,
- independently acquire knowledge they need from literature in order to deal with problems in in the fields of microbiology and hygiene which are important for Nutritional, Food and Consumer Sciences,
- apply the major microbiological methods and safety regulations for microbiological laboratories understand the theoretical background to the methods,
- name the most important hygiene regulations, to outline them and to work independently on problems.

### 2 Content of the module
- undesirable substances in foods  
- micro-organisms and their importance for nutrition, food, environment  
- visualisation, growth, metabolic activity, and discrimination of microorganisms relevant to food hygiene  
- multiplication and inactivation of microorganisms  
- interactions between micro- and macro-organisms (human, animal, plant)  
- Basic concepts and legal framework of food hygiene; characteristics of foodborne hazards that may be caused by food; approach to risk assessment and risk control; preventive measures in operations and households, strategies in risk assessment and risk management

### 3 Teaching methods
- 2 SWS lecture  
- 1,5 SWS laboratory exercise  
- 1 SWS exercise

### 4 Requirements for participation
Contents of the module fundamentals of Nutritional and Food Sciences

### 5 Requirements for receiving credits
Laboratory report, passed module examination

### 6 Usability of the module
Compulsory in the BSc Oe:EGL

### 7 Examination type
Written examination; passed module examination

### 8 Remarks

### 9 Methods of assessment
Grading

### 10 Responsible for the module
Chair of Microbiology – Food Technology
### Legislation

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-REC</td>
<td>135 hours divided in</td>
<td>5</td>
<td>3rd semester</td>
<td>Winter semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 72 in-class hours</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>• 63 hours self-study</td>
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</table>

<table>
<thead>
<tr>
<th>Module-type</th>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory in the BSc Oe:EGL and BSc Oe:VVM</td>
<td>Bachelor</td>
<td>German</td>
</tr>
</tbody>
</table>

1. **Qualification objectives**
   - The students are able to:
     - explain fundamental terminology and the role of law with regard to internationalisation,
     - classify law as a component of political and social structures,
     - outline the basics of the law sector of their specifications and to describe consequences,
     - evaluate simple judicial cases,
     - independently find and to apply legal, original sources.

2. **Content of the module**
   - International, European and national types of law
   - Principles of civil right and administrative law
   - Legal remedies and jurisdiction
   - Basics of European law
   - Basics of contract law
   - Basics of administrative law
   - Food law, in particular food information and food safety
   - Consumer law, in particular consumer contracts and product law

3. **Teaching methods**
   - 3 SWS lecture
   - 1 SWS seminar

4. **Requirements for participation**

5. **Requirements for receiving credits**
   - passed module examination

6. **Usability of the module**
   - See above under "module-type"; suitable also for other study programmes in regard to food

7. **Examination type**
   - Written examination; passed module examination

8. **Remarks**

9. **Methods of assessment**
   - Grading

10. **Responsible for the module**
    - Chair for the Law of Technical Development (Department of Social- and Cultural Studies)
## Current Research Topics in Biochemistry and Nutritional Epidemiology

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-BCH</td>
<td>135 hours divided in</td>
<td>5</td>
<td>4th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 81 in-class hours</td>
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</tr>
<tr>
<td></td>
<td>• 54 hours self-study</td>
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</table>

<table>
<thead>
<tr>
<th>Module-type</th>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory for the specialisations Nutrition and Health as well as Food Assessment in the BSc Oe:EGL; elective module for the specialisation Food Business; elective module in the BSc Oe:VVM</td>
<td>Bachelor</td>
<td>German</td>
</tr>
</tbody>
</table>

1 **Qualification objectives**

The module covers different topics from biochemical test results to study results in nutritional epidemiology relevant to current research. This is important in order to deepen the understanding for the role of nutrition as a part of a healthy lifestyle as well as a part of diseases and to understand controversial discussions. The students are able to:

- outline basic concepts of molecular biology and its methods, which are important for understanding the biochemical and genetic basis of biological processes in humans and in the production of food,
- explain the biological variability, which results during the translation of genetic information and the control of gene expression,
- outline research approaches in nutritional epidemiology and their potential and limitations,
- critically reflect results of studies in nutritional epidemiology,
- develop knowledge through self-study and project work using the relative subject literature,
- to plan and to carry out experiments in cell biology and biochemistry, and to evaluate the results,
- use the acquired knowledge to substantiate topics in biochemistry, molecular biology and bioethics and nutritional epidemiology, to position and to assess future opportunities and risks in the application of molecular biological methods in human biology and food production.

2 **Content of the module**

- Basic principles of biochemical and cell biological analysis of clinical material and food respectively
- Principles of immunology and allergology
- Regulating gene expression and the basis of differentiation processes
- Epigenetics and molecular imprinting
- Basic principles of "red" and "green" genetic engineering; bioethics
- Molecular research methods
- Methods of nutritional epidemiology and interpretation of current publications

3 **Teaching methods**

- 3 SWS lecture
- 1,5 SWS laboratory exercises

4 **Requirements for participation**

Study material of the module Fundamentals of Nutritional and Food Sciences; Food Science I and II

5 **Requirements for receiving credits**

Laboratory report; passed module examination.

6 **Usability of the module**

See above under "module-type"

7 **Examination type**

Written examination

8 **Remarks**

Basis for the modules Environmental and Food-borne Risks and Clinical Nutrition

9 **Methods of assessment**

Grading

10 **Responsible for the module**

Chair of Chemistry – Biochemistry
### Nutrition III: Preventive Nutrition

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-PVE</td>
<td>135 hours divided in • 81 in-class hours • 54 hours self-study</td>
<td>5</td>
<td>4th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

**Module-type**
- Compulsory for the specialisation in Nutrition and Health of the BSc Oe:EGL, elective module for other specialisations; elective module in the BSc Oe:VVM

**Level of the module**
- Bachelor

**Language**
- German

1. **Qualification objectives**
   - The module enables students to take science-based action in the human diet in accordance with national and international standards. The students recognise the various life cycles and various population groups of critical micronutrients and can develop individual nutrition concepts to provide a safe nutrient demand. The technical competence also comprises an in-depth knowledge of the metabolism of individual micronutrients and their needs, including the supply situation in various stages of people’s lives. The students are able to:
   - critically reflect on national and international nutrition recommendations,
   - understand the parameters for identification of the nutrition status, to conduct quantitative analyses according to instruction, to critically scrutinise achieved measured values and to assess their relevance,
   - derive possibilities of nutrition- and lifestyle-related prevention in different stages of life (e.g. pregnancy, infancy, childhood, seniority),
   - develop nutrition concepts for different stages of life and different population groups to guarantee an adequate diet and nutrient supply,
   - name critical micronutrients and their physiological function, to derive the effects of malnutrition and develop possibilities to remedy the defect,
   - create individual nutrition plans for the prevention of malnutrition and malnourishment based on the supply situation.

2. **Content of the module**
   - Introduction to micronutrients and recommendations of national and international scientific committees
   - Possibilities of nutrition- and lifestyle-related prevention in various stages of life
   - Micronutrients in the age-specific nutrition and prevention of malnutrition and malnourishment
   - Parameters and methods for assessing nutritional status
   - Critical nutrients and supply situation in Germany
   - Food in prevention of illnesses and malnourishment

3. **Teaching methods**
   - 3 SWS seminar
   - 1.5 SWS laboratory exercises

4. **Requirements for participation**
   - Contents of the module Human Nutrition

5. **Requirements for receiving credits**
   - Laboratory report, presentation, written report; passed module examination

6. **Usability of the module**
   - See above under “module-type”

7. **Examination type**
   - Written examination; passed module examination

8. **Remarks**

9. **Methods of assessment**
   - Grading

10. **Responsible for the module**
    - Chair of Nutritional Epidemiology – Preventive Strategies in Nutrition
## Nutrition and Diseases

### Module- number
OE-BS-NUD

### Workload
270 hours divided in
- 162 in-class hours
- 108 hours self-study

### ECTS-Credits
10

### Semester
4th semester

### Frequency offered
Summer semester

### Course length
1 semester

### Module-type
Compulsory for the specialisation in Nutrition and Health of BSc Oe:EGL; elective module for other specialisations; elective module in the BSc Oe:VVM

### Level of the module
Bachelor

### Language
German

### Qualification objectives
The module enables students to address science-based medical nutrition issues, according to national and international standards. The students are able to:
- explain the relations between nutrition, lifestyle and various diseases and to exemplarily outline goals for populations’ health,
- characterise the pathophysiology of various diseases and to derive dietary recommendations and exercise therapy and to deal with new issues,
- conceive the individual nutritional condition and the lifestyle regarding diet-related diseases and to formulate specific problems,
- develop nutritional concepts in accordance with regulations and carry out individual nutrition counselling and motivate the patient,
- lead consultations with patients, families, and other professionals,
- evaluate interdisciplinary concepts of therapy,
- critically reflect on their own actions and to reflect solutions.

### Content of the module
State of research in the field of diet-related diseases and dietetics, specific problems in nutrition counselling, models of behavioural change and fields of actions regarding interventions, fundamentals of exercise therapy and specific concepts of exercises for diseases such as:
- Overweight and obesity,
- Cardiovascular diseases,
- Diabetes mellitus
- Diseases of the gastrointestinal tract
- Cancer

### Teaching methods
- 3 SWS seminar (Nutrition-related Diseases)
- 2 SWS seminar (Nutritional counselling, Exercise Therapy)
- 2 SWS exercises (Nutritional counselling, Exercise Therapy)
- 2 SWS laboratory exercises Dietetics

### Requirements for participation

### Requirements for receiving credits
Laboratory report Dietetics; passed module examination

### Usability of the module
See above under “module-type”

### Examination type
Oral examination

### Remarks

### Methods of assessment
Grading

### Responsible for the module
Chair of Nutritional Physiology – Human Nutrition – Nutrition in Prevention and in Diseases
Food Science III: Food Processing

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
</table>
| OE-BS-LMV     | 270 hours divided in  
  • 162 in-class hours  
  • 108 hours self-study | 10 | 4th semester | Summer semester | 1 semester |

Module-type
Compulsory for the specialisations Food Business and Food Assessment, elective module for the specialisation Nutrition and Health des BSc Oe:EGL; elective module in the BSc Oe:VVM

Level of the module
Bachelor

Language
German

1 Qualification objectives
The students are able to:
- name the specific terms of food process engineering. This enables them to acquire knowledge from literature on food technology and to communicate with engineers on a high level of comprehension,
- characterise and to model simple processes of food processing and to understand the procedures for characterisation and modelling of complex, technical processes,
- characterise the steps of processing various raw materials into food,
- explain the relationship between process and product quality,
- explain the mechanisms of desirable and undesirable changes of food, and of food preservation,
- apply the acquired knowledge to assess the quality of processed foodstuffs, to assess and optimise manufacturing processes and to individually work on problems.

2 Content of the module
- unit operations in food processing
- mechanical operations, rheology
- thermal operations and their physical principles
- drying of foods, water activity, sorption isotherms, process engineering
- cooling and freezing: processes and equipment
- chemical and biotechnological processes
- processing of selected foods
- process technology: important ingredients of foods, and their changes during processing
- food spoilage and preservation

3 Teaching methods
- 4 SWS seminar
- 2 SWS exercises
- 2 SWS laboratory exercise

4 Requirements for participation
Contents of the modules Food Science I and II and Technology I; B 1-niveau in English (ability to study specialised literature in English)

5 Requirements for receiving credits
Work on exercises; laboratory report; passed module examination

6 Usability of the module
See above under “module-type”

7 Examination type
Written examination

8 Remarks
Literature will be announced, English study material is available. Course Materials are provided at the online platform.

9 Methods of assessment
Grading

10 Responsible for the module
Chair of Microbiology – Food Technology
### Food Quality

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-LMQ</td>
<td>135 hours divided in • 72 in-class hours • 63 hours self-study</td>
<td>5</td>
<td>4th. semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

**Module-type**
- Compulsory for the specialisations Nutrition and Health and also Food Assessment, elective module for the specialisation Food Business des BSc Oe:EGL; elective module in the BSc Oe:VVM

**Level of the module**
- Bachelor

**Language**
- German

#### 1 Qualification objectives
The students are able to:
- perform a nutritional assessment of food constituents and to derive the appropriate use of functional or novel foods for human nutrition,
- outline the relationship between food constituents and different diseases,
- assess food from an ecological perspective and to develop new approaches for sustainable improvements in the food industry,
- search literature in small groups,
- structure and present results in group.

#### 2 Content of the module
- Quality connotation
- Functional foods, health claims, novel foods
- β-glucan, inulin, ω-3 fatty acids, phytosterols, carotenoids, polyphenols, etc.
- Environmental aspects of the cultivation, production, and consumption of food

#### 3 Teaching methods
- 4 SWS seminar

#### 4 Requirements for participation
Recommended: Contents of the modules Food Science I and II

#### 5 Requirements for receiving credits
Presentation; passed module examination

#### 6 Usability of the module
See above under “module-type”

#### 7 Examination type
Written examination

#### 8 Remarks

#### 9 Methods of assessment
Grading

#### 10 Responsible for the module
Chair of Nutrition Quality – Food Quality
Management Techniques I

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-MT1</td>
<td>135 hours divided in • 72 in-class hours • 63 hours self-study</td>
<td>5</td>
<td>4th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

Module-type
Compulsory for the specialisations Food Business and Food Assessment in the BSc Oe:EGL; elective module for the specialisation Nutrition and Health; elective module in the BSc Oe:VVM

1 Qualification objectives
The students are able to:
- identify and to analyse specific problems of food establishments and to solve them in a goal-oriented way
- apply current management techniques in practice,
- take economical decisions in working groups, to analyse the consequences and to adapt new applications.

2 Content of the module
- Management tasks and concepts
- Current management techniques
- Methods of corporation management
- Accounting and controlling
- Innovation
- Industry-specific problems

3 Teaching methods
- 2 SWS seminar
- 2 SWS exercises; corporate strategic planning simulation

4 Requirements for participation
Study material of the modules Principles of Economics and Economics II

5 Requirements for receiving credits
Work on examples in exercises (individually, in pairs or groups); presentation of the results; passed module examination.

6 Usability of the module
See above under “module-type”

7 Examination type
Oral examination

8 Remarks
Basis for the modules Management Techniques II and Human Resource Management. Especially important for this module is teamwork, time management and the reflexion of group processes.

9 Methods of assessment
Grading

10 Responsible for the module
Chair of Economics – Macro Economics – Business Information Systems
## Marketing, Press and Public Relations

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-MPO</td>
<td>135 hours divided in • 72 in-class hours • 63 hours self-study</td>
<td>5</td>
<td>4th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

**Module-type**
- Compulsory for the specialisation Food Business in the BSc Oe:EGL; compulsory in the BSc Oe:VVM; elective module for other specialisations in the BSc Oe:EGL

**Level of the module**
- Bachelor

**Language**
- German

### 1 Qualification objectives
The students are able to:
- apply fundamental terms, techniques, and instruments of marketing,
- analyse the competitive situation, the market potential, market developments, and trends with regard to sustainability and diversity and to apply these results in the food industry,
- develop targeted marketing strategies,
- create marketing concepts,
- analyse, to evaluate and to develop further the internal and external corporate communications.

### 2 Content of the module
- Marketing
- Marketing as an interface of economic success
- Competitive analysis and customer analysis
- Market development and trend analysis
- Public relations of companies, public image
- Risk communication

### 3 Teaching methods
- 2 SWS seminar
- 2 SWS exercises

### 4 Requirements for participation
Study material of the modules Principles of Economics, Economics II, Business Information Systems and Fundamentals of Communication and Counselling

### 5 Requirements for receiving credits
Work on examples in exercises (individually, in pairs or groups); presentation of the results; passed module examination

### 6 Usability of the module
See above under “module-type”

### 7 Examination type
Oral examination

### 8 Remarks
Basis for the modules Management Techniques II and Human Resource Management

### 9 Methods of assessment
Grading

### 10 Responsible for the module
Chair of Economics – Macro-Economics – Business Information Systems
Process-oriented Quality Management

<table>
<thead>
<tr>
<th>Module number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
</table>
| OE-BS-PQM     | 135 hours divided in:  
  - 81 in-class hours  
  - 54 hours self-study | 5 | 4th semester | Summer semester | 1 semester |

<table>
<thead>
<tr>
<th>Module-type</th>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory in the BSc Oe:EGL and BSc Oe:VVM</td>
<td>Bachelor</td>
<td>German</td>
</tr>
</tbody>
</table>

1 Qualification objectives
The students are able to:
- name the goals and concepts of process and quality management and to assess the benefits for companies in the food industry and service facilities,
- apply important methods for the analysis and optimisation of the core processes in the food industry and service organisations,
- apply important methods of quality management,
- use the PDCA (Plan-Do-Check-Act) Cycle for the continuous improvement process,
- implement process-based quality management system in small and medium-sized food businesses and in service organisations,
- apply methods of implementing the International Feature Standard (Food).

2 Content of the module
- Process-oriented quality management-approach
- Approach and benefits of process-oriented quality management for companies /organisations
- Meaning of quality, concepts of quality management
- Methods and processes for quality management
- Implementation and evaluation of quality management systems
- HACCP
- International Featured Standard, Food
- Traceability

3 Teaching methods
- 2.5 SWS lecture
- 2 SWS exercise

4 Requirements for participation

5 Requirements for receiving credits
Passed module examination

6 Usability of the module
Compulsory in the BSc Oe:EGL and BSc Oe:VVM

7 Examination type
Written examination

8 Remarks
Guest lectures of representatives from professional practice, exercises supervised by various experts; the examination is mainly composed of questions with knowledge transfer

9 Methods of assessment
Grading

10 Responsible for the module
Chair of Food Business – Chemistry – Food Chemistry – Quality Management
### Business Information Systems

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-WIN</td>
<td>135 hours divided in 72 in-class hours and 63 hours self-study</td>
<td>5</td>
<td>4th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

**Module-type**
- Compulsory for the specialisation Food Business in the BSc Oe:EGL, elective module for other specialisations in the BSc Oe:EGL; elective module in the BSc Oe:VVM

**Level of the module**
- Bachelor

**Language**
- German

1. **Qualification objectives**
   - The students are able to:
     - apply computer-based information and communication systems in food business and management,
     - understand the basic structures of application software,
     - understand the computerised models of production planning, lot tracking, and food-specific logistics,
     - integrate computer science and its applications in businesses.

2. **Content of the module**
   - Fundamentals of computer science (hardware, software, networks, databases; architecture of information systems)
   - Applications
   - ERP-Systems, cross-cutting systems, analysis and information systems; specific support systems in the food industry; production control systems
   - Important methods and organisation in the application of information technologies (selection of software; information management; IT security)
   - Application in the food industry

3. **Teaching methods**
   - 2 SWS seminar
   - 2 SWS exercises

4. **Requirements for participation**
   - Contents of the modules Principles of Economics and Economics II

5. **Requirements for receiving credits**
   - Work on examples in exercises (individually, in pairs or groups); presentation of the results; passed module examination

6. **Usability of the module**
   - See above under “module-type”

7. **Examination type**
   - Oral examination

8. **Remarks**

9. **Methods of assessment**
   - Grading

10. **Responsible for the module**
    - Chair of Economics – Macro Economics – Business Information Systems
1 Qualification objectives
Using a science-based approach, the students work independently within a specified time period on a problem from their chosen profile in Nutritional, Food and Consumer Sciences. Interdisciplinary aspects of this process are of particular importance. The students are able to:
- apply the rules of good scientific practice,
- do own scientific research question and to formulate a objective of the work,
- choose appropriate methods to work on the topic and to explain it in a comprehensible way,
- conduct a literature research and to use specialised literature in German and English,
- document and to assess the findings systemically,
- discuss and to interpret the findings and to deduce conclusions for theory and practice.

2 Content of the module
- Finding topics and posing questions
- Research design and selection of methods
- Empirical and theoretical work
- Presentation of results from a scientific viewpoint
- Implications for practice and theory

3 Teaching methods

4 Requirements for participation
Formal: Modules of the first 4 semesters (as specified in the curriculum) must be successfully completed, not more than one of these modules may be missing. Furthermore, a confirmation from the external business or institution of the completion of the internship must be submitted.

5 Requirements for receiving credits
Passed module examination

6 Usability of the module
Compulsory in the BSc Oe:EGL and BSc Oe:VVM

7 Examination type
Written paper, a colloquium based on that paper

8 Remarks

9 Methods of assessment
Grading

10 Responsible for the module
Study Dean
**Internship**

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-BPS</td>
<td>540 hours 100 hours preparatory exercise</td>
<td>20</td>
<td>5th semester</td>
<td>Every semester</td>
<td>1 semester divided in 16 week fulltime internship in a company approved by the Department</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Module-type</th>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory in the BSc Oe:EGL and BSc Oe:VVM</td>
<td>Bachelor</td>
<td>German</td>
</tr>
</tbody>
</table>

1 **Qualification objectives**

The practical experience module is designed to guide students into the occupational professions of Nutrition and Health, Food Business, Food Assessment and Catering and Supply Management. Students are acquainted with the use of scientific knowledge to solve problems in professional practice under teacher guidance for a designated period of time at the partner companies and institutions. They are accompanied interactively by teachers through their self-directed learning process, and their knowledge and personal skills benefit from action-oriented learning during the internship. The students are able to:

- apply the technical and methodological skills gained in the course of studies at the internship and strengthen them by working on specific tasks at the business or institution,
- identify the structure and process organisation of the institution at which practical experience is gained,
- reflect own capabilities and interests,
- work interdisciplinary, mobile, and with support of virtual work environments,
- incorporate themselves in complex tasks and operating cultures in a short time (employability).

2 **Content of the module**

- Vocational preparatory meetings at the university (expert interviews, excursion, competence training, job application training, etc.)
- Accompanying events by the university e.g. in the form of e-learning

3 **Teaching methods**

- 100 hours preparatory exercises, e-learning
- 16 weeks fulltime internship in a company approved by the Department

4 **Requirements for participation**

All modules of the first three semesters have to be passed

5 **Requirements for receiving credits**

Regular participation in virtual communication forums with the teacher in order to continually adjust and optimise the learning process at the work place. Writing of small assignments, such as the description of the structures and operational organisation of the internship firm; passed Module examination.

6 **Usability of the module**

Compulsory in the BSc Oe:EGL and BSc Oe:VVM.

7 **Examination type**

Portfolio examination

8 **Remarks**

Module is admission requirement of the Bachelor Thesis. Literature will be announced, materials will be provided on the learning platform.

9 **Methods of assessment**

Grading

10 **Responsible for the module**

Placement Officer
Applied Statistics and Analytical Quality Management

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-ASQ</td>
<td>135 hours divided in</td>
<td>5</td>
<td>6th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>72 in-class hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>63 hours self-study</td>
<td></td>
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</tbody>
</table>

**Module-type**
Compulsory for the specialisation Food Assessment in the BSc Oe:EGL; elective module for the other specialisations; elective module in the BSc Oe:VVM

**Level of the module**
Bachelor

**Language**
German

1 **Qualification objectives**
The students are able to:
- perform chemical, biochemical, physical, and microbiological analyses by planning, evaluating, and critically interpreting the resulting data in order to make decisions and make use of the data,
- expound and apply regulations and standards for the accreditation of laboratories, ensuring the accuracy and precision of the data obtained,
- take on tasks in quality management in laboratories and in related areas of the food industry.

2 **Content of the module**
- Multivariate statistics
- Statistical methods in analytical quality assurance and process control and their use for decision making
- The role of analyses in quality assurance: what the analyses can and cannot achieve?
- process indicators, quality control charts
- legal background, requirements of the standards (DIN EN ISO 17025)
- standard and limit values: how are they managed?
- requirements for laboratory analyses: accreditation, neutrality

3 **Teaching methods**
- 2 SWS seminar
- 2 SWS exercises

4 **Requirements for participation**
Contents of the modules Research Methods I and II and Process-oriented Quality Management

5 **Requirements for receiving credits**
Fulfil exercises; passed module examination

6 **Usability of the module**
See above under “module-type”

7 **Examination type**
Written examination

8 **Remarks**
Guest lectures of representatives from professional practice, exercises supervised by various experts; the examination is mainly composed of questions with knowledge transfer

9 **Methods of assessment**
Grading

10 **Responsible for the module**
Chair of Physics and Technology
<table>
<thead>
<tr>
<th><strong>Module number</strong></th>
<th><strong>Workload</strong></th>
<th><strong>ECTS-Credits</strong></th>
<th><strong>Semester</strong></th>
<th><strong>Frequency offered</strong></th>
<th><strong>Course length</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-ERB</td>
<td>135 hours divided in</td>
<td>5</td>
<td>6th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 72 in-class hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 63 hours self-study</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Module-type**
Optional compulsory module for the specialisation Nutrition and Health in the BSc Oe:EGL; elective module for the other specialisations in the BSc Oe:VVM

**Level of the module**
Bachelor

**Language**
German

1 **Qualification objectives**
The students are able to:
- outline individual, institutional and social conditions for lifelong learning and to describe consequences for nutritional education,
- define nutritional education and lifelong learning and to appropriate different training measures,
- organise nutritional education processes for various education groups and settings,
- implement nutritional education into „food literacy“ considering „diversity management“,
- methodically and didactically conceptualise an educational package for target groups.

2 **Content of the module**
- Frameworks for lifelong learning
- Individual learning concepts
- Methodology and didactics in lifelong learning for various target groups
- Selected didactic concepts
- Concepts of intervention in nutritional education
- Diversity management
- Reflection of own conception
- Forms of evaluation

3 **Teaching methods**
- 2 SWS seminar
- 2 SWS exercises

4 **Requirements for participation**
Study material of the module Fundamentals of Communication and Counselling

5 **Requirements for receiving credits**
Presentation; passed module examination

6 **Usability of the module**
See above under “module-type”. Students of the specialisation Nutrition and Health in the BSc Oe:EGL choose two of the three modules Nutritional Education, Health Care Management and Clinical Nutrition

7 **Examination type**
Oral examination

8 **Remarks**

9 **Methods of assessment**
Grading

10 **Responsible for the module**
Chair of Socio-Ecology of Private Households – Management in Private Households – Ecology of Living – Consumer Protection

Module handbook BSc Nutritional, Food and Consumer Sciences: Nutrition, Health, Food Business
**Health Care Management**

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-GHM</td>
<td>135 hours divided in</td>
<td>5</td>
<td>6th</td>
<td>Summer</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 72 in-class hours</td>
<td></td>
<td>semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 63 hours self-study</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Module-type**
- Optional compulsory module for the specialisation Nutrition and Health in the BSc Oe:EGL; elective module for the other specialisations and in the BSc Oe:VVM; compulsory module in the BSc Dietetics

**Level of the module**
- Bachelor

**Language**
- German

1. The students are able to:
   - explain the legal and institutional framework of health care provision in Germany,
   - explain structural features, structural principles, operating modes, organisation and financing forms of the health care provision system in the statutory health insurance and social long-term care insurance,
   - critically reflect relevant legal relations in the health care system, particularly in the area of patient and service law and in the field of service contracts between providers of services and payers,
   - to be aware of basic issues and methods in health economics that can be used to analyse economic problems in the national health care system contribute to an international background.

2. **Content of the module**
   - Structure, organisation and financing of the German statutory health insurance (Gesetzlichen Krankenversicherung (GKV))
   - Private health insurance (Privaten Krankenversicherung (PKV)) and social nursing care insurance (Sozialen Pflegeversicherung (SPV))
   - Market failure in markets for health goods and health insurance
   - Overuse, underuse, and misuse of structures of health care in Germany
   - Social security legal frameworks for the development of new health care provision schemes in Germany, including sector-, organisation-, and profession-wide health care deficits
   - Application of applied international health care concepts to the German health care provision context in an international comparison based on the concepts of managed care, case management, clinical pathways, etc.
   - Lighthouse projects of new health care provision schemes in Germany: disease management programs, integrated health care, gatekeeper-based medical care, medical care centres

3. **Teaching methods**
   - 2 SWS seminar
   - 2 SWS exercises

4. **Requirements for participation**
   Contents of the module Process-oriented Quality Management

5. **Requirements for receiving credits**
   Passed module examination

6. **Usability of the module**
   See above under “module-type”. Students of the specialisation Nutrition and Health in the BSc Oe:EGL choose two of the three modules Nutritional Education, Health Care Management and Clinical Nutrition

7. **Examination type**
   Oral examination

8. **Remarks**

9. **Methods of assessment**
   Grading

10. **Responsible for the module**
    Chair of Health Technology Assessment and Health System Design (Faculty Nursing and Health Sciences)
### Module Handbook

#### Module: Nutrition, Food, Globalisation

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
</table>
| OE-BS-ELG     | 135 hours divided in:  
- 81 in-class hours  
- 54 hours self-study | 5 | 6th semester | Summer semester | 1 semester |

**Module-type**
Compulsory in the BSc Oe: EGL and BSc Oe: VVM for all specialisations

**Level of the module**
Bachelor

**Language**
German

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1. **Qualification objectives**
The module enables students to understand and to assess the complex relationship between nutrition, food production and global aspects and, thus, to work on solutions for current and future global challenges. The students are able to:
- define and to systemise nutritional problems in newly industrialised and developing countries;
- identify the mutual influence of malnutrition and infectious diseases, evaluate their consequences and to implement the findings in the planning of intervention measures;
- analyse the reasons and consequences of health and nutrition transition and to consider them when planning intervention measures;
- place health and nutritional problems in the context of sustainable development;
- explain basic theories and approaches of emergency relief, prevention of hunger and security of food supply and assess their advantages and disadvantages;
- draw up concepts for measures to secure food supply, to eliminate malnutrition and to prevent chronic diseases;
- name most important global players and organisations in the field of nutrition, food and development;
- discuss current development policy issues and problems regarding sustainability;
- explain the frameworks of global food systems and to estimate their relevance regarding measures of the global security of food supply.

2. **Content of the module**
   **Current problems and future challenges**
   - Nutrition and health in a global context
   - Health and nutrition transition
   - Hunger, opulence, development, sustainability
   - Global economy, world food policy and world agricultural policy (Codex Alimentarius; terms of trade)
   **Solution approaches**
   - Concepts of (development) policy and sustainability
   - Intervention approaches of food, economic and social policy
   - Current practical examples

3. **Teaching methods**
- 3 SWS seminar

4. **Requirements for participation**

5. **Requirements for receiving credits**
Passed module examination; work on exercises; presentation; work with English literature

6. **Usability of the module**
See above under “module-type”

7. **Examination type**
Written examination

8. **Remarks**
Guest lectures

9. **Methods of assessment**
Grading

10. **Responsible for the module**
Chair of Nutritional Epidemiology – Preventive Strategies in Nutrition
### Clinical Nutrition

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-KLE</td>
<td>135 hours divided in</td>
<td>5</td>
<td>6th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 54 in-class hours</td>
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</tr>
<tr>
<td></td>
<td>• 81 hours self-study</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Module-type**
Optional compulsory module of the specialisation Nutrition and Health in the BSc Oe:EGL; elective module of the other specialisations and in the BSc Oe:VVM.

**Level of the module**
Bachelor

**Language**
German

1 **Qualification objectives**
The module enables students to take science-based action in clinical nutrition in accordance with national and international standards. The students are able to:
- describe disorders of food intake, pathophysiological processes of the gastrointestinal tract, as well as liver, pancreas and kidneys and to develop the use of complementary feeding as part of therapy in nursing homes and home care,
- guide both the rational dietetics as well as to outline advantages and disadvantages of tube feeding and parenteral nutrition,
- characterise the individual nutritional status and apply screening instruments to identify malnutrition,
- develop suggestions about the type of clinical nutrition based on existing, individual nutritional problems,
- identify problems in the practical implementation of enteral or parenteral nutrition therapy and to develop solutions,
- evaluate implemented nutritional measures,
- see own actions from a critical distance and reflect solutions.

2 **Content of the module**
State of research and current issues in clinical nutrition
- Rational dietetics and quality assurance
- Diseases that go hand in hand with eating disorders and disorders of the gastrointestinal tract, liver, pancreas and kidneys and intervention measures
- Post-aggression metabolism
- Malnutrition and screening instruments
- Detection of the nutritional status in outpatient and inpatient facilities and implementation of food standards
- Enteral and parenteral nutrition
- Life of patients and quality of life
- Ethical issues

3 **Teaching methods**
- 3 SWS seminar

4 **Requirements for participation**
Recommended: Module contents of the first three semesters, module Nutrition II – Human Nutrition, module Nutrition and Diseases

5 **Requirements for receiving credits**
Passed module examination

6 **Usability of the module**
See above under “module-type”. Students of the specialisation Nutrition and Health in the BSc Oe:EGL choose two of the three modules Nutritional Education, Health Care Management and Clinical Nutrition

7 **Examination type**
Oral examination

8 **Remarks**
Guest lectures; Excursion to a stationary facility

9 **Methods of assessment** Grading

10 **Responsible for the module**
Chair of Nutritional Physiology – Human Nutrition – Nutrition in Prevention and in Diseases
### Food Quality Assessment – Advanced Level

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-EGR</td>
<td>270 hours divided in</td>
<td>10</td>
<td>6th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 162 in-class hours</td>
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<tr>
<td></td>
<td>• 108 hours self-study</td>
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</tbody>
</table>

#### Module-type
Compulsory for the specialisation Food Assessment in the BSc Oe:EGL; elective module for the other specialisations; elective module in the BSc Oe:VVM

#### Level of the module
Bachelor

#### Language
German

1. **Qualification objectives**
   - The students are able to:
     - apply advanced methods of sensory, chemical and biochemical biomolecular analysis of food,
     - describe the theoretical foundations,
     - specifically use and apply the methods.

2. **Content of the module**
   - sensory science: special procedures
   - food chemistry: special analysis methods
   - food microbiology: special analysis methods
   - biochemical and biomolecular analysis

3. **Teaching methods**
   - 4 SWS seminar
   - 2 SWS exercises
   - 2 SWS laboratory exercises

4. **Requirements for participation**

5. **Requirements for receiving credits**
Laboratory report; passed module examination

6. **Usability of the module**
See above under "module-type"

7. **Examination type**
Oral examination

8. **Remarks**
Guest lectures given by professionals

9. **Methods of assessment**
Grading

10. **Responsible for the module**
    Chair of Food Business – Chemistry – Food Chemistry – Quality Management
Management Techniques II

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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</thead>
<tbody>
<tr>
<td>OE-BS-MT2</td>
<td>270 hours divided in</td>
<td>10</td>
<td>6th</td>
<td>Summer</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>- 162 in-class hours</td>
<td></td>
<td>semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 108 hours self-study</td>
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</tbody>
</table>

Module-type
Compulsory for the specialisation Food Business in the BSc Oe:EGL; elective module for the other specialisations in the BSc Oe:EGL; elective module in the BSc Oe:VVM

Level of the module
Bachelor

Language
German

1 Qualification objectives
The students are able to:
- analyse, to assess and to enhance the processes of food business,
- assess and enhance business plans,
- interdisciplinary, independently apply the acquired knowledge and skills in the field of economics,
- moderate in project teams and co-networks and, thereby, to regard needs and competencies,
- edit results that they are suitable for presentations.

2 Content of the module
Models, case studies, business games, and practical exercises from food industry

3 Teaching methods
- 8 SWS seminar including exercises

4 Requirements for participation
Contents of the modules Principles of Economics, Economics II, Process-oriented Quality Management; Business Information Systems and Management Techniques I (recommended)

5 Requirements for receiving credits
Work on examples in exercises (individually, in pairs or groups); presentation of the results; passed module examination

6 Usability of the module
See above under “module-type”

7 Examination type
Oral examination

8 Remarks
Especially important for this module is teamwork, time management and the reflexion of group processes; the module qualifies student for the entry into professional life and lifelong learning (occupational competence).

9 Methods of assessment
Grading

10 Responsible for the module
Chair of Economics – Macro Economics – Business Information Systems
### Human Resources Management

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
</table>
| OE-BS-PMT     | 270 hours divided in  
• 72 in-class hours  
• 63 hours self-study | 5 | 6th semester | Summer semester | 1 semester |

<table>
<thead>
<tr>
<th>Module-type</th>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compulsory for the specialisation Food Business in the BSc Oe EGL and for the profile Supply Management in the BSc Oe:VVM; elective module for the profile Supply Management in the BSc Oe:VVM; elective module in the BSc Oe:EGL</td>
<td>Bachelor</td>
<td>German</td>
</tr>
</tbody>
</table>

1 **Qualification objectives**
The students can apply the instruments of human resource managements and can analyse and assess current challenges. They can develop and take measures to solve problems and evaluate their success. The students are able to:
- individually realise human resource planning,
- plan and to apply personnel development measures and personnel assessment techniques,
- apply instruments of personnel procurement and personnel layoff,
- apply measures of human resource management,
- develop human resource management decisions in work teams, to analyse their effects and to adjust new tasks.

2 **Content of the module**
- Human resource planning
- Personnel procurement
- Human resource development
- Human resource management
- Personnel remuneration
- Personnel assessment
- Personnel controlling
- Personnel motivation
- International placement of personnel

3 **Teaching methods**
- 2 SWS seminar
- 2 SWS exercise

4 **Requirements for participation**
Contents al of the modules Principles of Economics, Economics II and Legislation (recommended)

5 **Requirements for receiving credits**
Work on examples in exercises (individually, in pairs or groups); presentation of the results; passed module examination.

6 **Usability of the module**
See above under “module-type”

7 **Examination type**
Oral examination

8 **Remarks**
Especially important for this module is teamwork, time management and the reflexion of group processes.

9 **Methods of assessment**
Grading

10 **Responsible for the module**
Chair of Economics – Macro Economics – Business Information Systems
### Product Development

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-PEW</td>
<td>135 hours divided in • 72 in-class hours • 63 hours self-study</td>
<td>5</td>
<td>6th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

#### Module-type
- Compulsory for the specialisation Food Business in the BSc Oe:EGL, elective module for the other specialisations in the BSc Oe:EGL; elective module in the BSc Oe:VVM

#### Level of the module
- Bachelor

#### Language
- German

1. **Qualification objectives**
   - The students are able to:
     - explain the stages of product development,
     - apply sensory and nutritional physiological quality criteria and food regulatory standards in the development of new products,
     - apply methods for sensory evaluation of food and for determining the shelf life,
     - apply sustainability criteria for product development,
     - work in teams and present the results.

2. **Content of the module**
   - The importance of product development, product development phases
   - Sensory, nutritional and food regulatory aspects of product development
   - Procedures for determining the shelf-life

3. **Teaching methods**
   - 2 SWS seminar
   - 2 SWS project work

4. **Requirements for participation**
   - Contents of the module Food Science I

5. **Requirements for receiving credits**
   - Passed module examination (project work for the written report)

6. **Usability of the module**
   - See above under “module-type”

7. **Examination type**
   - Written examination

8. **Remarks**

9. **Methods of assessment**
   - Grading

10. **Responsible for the module**
    - Chair of Nutrition Quality – Food Quality
## Environmental and Food-borne Risks

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
<tbody>
<tr>
<td>OE-BS-RIS</td>
<td>135 hours divided in</td>
<td>5</td>
<td>6th semester</td>
<td>Summer semester</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 72 in-class hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 63 hours self-study</td>
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</table>

### Module-type
- Compulsory for the specialisations Nutrition and Health and Food Assessment in the BSc Oe: EGL; elective module in the BSc Oe: VVM

<table>
<thead>
<tr>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>German/ English</td>
</tr>
</tbody>
</table>

### 1 Qualification objectives
- The module enables students to scientifically assess health risks from physical, chemical, and biological hazards from foods and the environment. Preventive steps in nutrition and environmental hygiene can be elucidated, and risk communication can be developed between patients, medical staff. The students are able to:
  - assess the effects of chemical and biological hazards to the human organism, in particular the hormonal and immune systems,
  - develop focused knowledge through self-study and project work from the scientific literature,
  - apply the knowledge to evaluate and develop further the design and implementation of measures for risk management at levels of official regulation and institutional practice,
  - communicate on risks with medical staff, clients and patients.

### 2 Content of the module
- Principles of toxicology: evaluation of chemical and biological risks: characterization of the agents and their effect on the organism, exposure analysis, characterization of the resulting health problems
- Risk management: development and assessment of threshold values and legal limits, conversion into practical action
- Subjective perception of risks; risk communication between experts and stakeholders

### 3 Teaching methods
- 2 SWS seminar
- 2 SWS project

### 4 Requirements for participation
- Study material of the modules Fundamentals of Nutritional and Food Science and Food I and II

### 5 Requirements for receiving credits
- Passed module examination

### 6 Usability of the module
- See above under “module-type”

### 7 Examination type
- Project report (50%), oral examination (50%)

### 8 Remarks
- English literature is required

### 9 Methods of assessment
- Grading

### 10 Responsible for the module
- Chair of Chemistry – Biochemistry
## Consumer Protection and Consumer Education

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
</tr>
</thead>
</table>
| OE-BS-VBL     | 135 hours divided in:  
  - 72 in-class hours  
  - 63 hours self-study | 5 | 6th semester | Summer semester | 1 semester |

### Module-type
- Compulsory for the specialisation Nutrition and Health in the BSc Oe:EGL and for the profile Supply Management in the BSc Oe:VVM
- Elective module for the other specialisations in the BSc Oe:EGL and for the profile Supply Management in the BSc Oe:VVM

### Level of the module
- Bachelor

### Language
- German

---

### 1 Qualification objectives
The students are able to:
- assess the position of consumers in the European internal market and in Germany
- explain the historical development of consumer policy and consumer protection bodies at the European and German level,
- outline the basic features of the current consumer policy at national and European level,
- differentiate between consumer education, advice, and information and to provide different examples from European and German levels,
- describe the behaviour of different consumer groups,
- plan consumer education training for different groups of consumers at a project-based level.

### 2 Content of the module
- Historical development of consumer policy and consumer protection bodies at the European and German levels
- Current consumer policy of the federal government and states
- Position of consumers in the European internal market and the market system of Germany
- Consumer behaviour and influencing factors
- Targeted consumer education, counselling activities, and information measures
- Evaluation methods

### 3 Teaching methods
- 2 SWS seminar
- 2 SWS project

### 4 Requirements for participation
Contents of the modules Legislation and Fundamentals of Communication and Counselling

### 5 Requirements for receiving credits
Completion of a consumer education project; passed module examination

### 6 Usability of the module
See above under "module-type"

### 7 Examination type
Oral examination

### 8 Remarks
English study material

### 9 Methods of assessment
Grading

### 10 Responsible for the module
Chair of Socio-Ecology of Private Households – Management in Private Households – Ecology of Living – Consumer Protection
### European Studies (European Module)

<table>
<thead>
<tr>
<th>Module-number</th>
<th>Workload</th>
<th>ECTS-Credits</th>
<th>Semester</th>
<th>Frequency offered</th>
<th>Course length</th>
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</thead>
<tbody>
<tr>
<td>OE-BS-IN2</td>
<td>135 hours divided in</td>
<td>5</td>
<td>6th</td>
<td>Summer</td>
<td>1 semester</td>
</tr>
<tr>
<td></td>
<td>• 72 in-class hours</td>
<td></td>
<td>semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 63 hours self-study</td>
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</table>

<table>
<thead>
<tr>
<th>Module-type</th>
<th>Level of the module</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective</td>
<td>Bachelor</td>
<td>German</td>
</tr>
</tbody>
</table>

1. **Qualification objectives**
   The students are able to:
   - develop insights and critical reflection ability on the European integration process within the EU,
   - assess career-relevant European developments,
   - assess EU-funding and their objectives and to discuss offers,
   - plan/structure the process of an application and specifically apply support measures.

2. **Content of the module**
   (I) European law:
   The success of the European Union also explains the fact that it is a community based on law. This part of the course will present the roles of the law within the European Union. This will be discussed at the beginning of Fundamentals of International Law and also the development of the founding treaties, including the Treaty of Lisbon. Topics include the EU institutions and legislation in relation to the Member States and the judicial protection. The content will be developed on a case related to course-related examples, including internal market legislation, the basic liberties, and consumer rights.

   (II) EU and professional world:
   EU-Funding and programme

3. **Teaching methods**
   - 4 SWS seminar

4. **Requirements for participation**

5. **Requirements for receiving credits**
   Presentation; passed module examination

6. **Usability of the module**
   Elective module for all Bachelor degree courses

7. **Examination type**
   Written examination

8. **Remarks**

9. **Methods of assessment**
   Grading

10. **Responsible for the module**
    Chair of the Law of Technical Development (Department of Social- and Cultural Studies)
### Bachelor of Science Nutrition, Health, Food Business

**General structure**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>Elective modules</strong></td>
<td>according to the chosen specialisation</td>
<td></td>
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<tr>
<td>5. Sem.</td>
<td></td>
<td><strong>Bachelor Thesis [10 cr.]</strong></td>
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<tr>
<td></td>
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<td><strong>Internship [20 cr.]</strong></td>
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<tr>
<td>4. Sem.</td>
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<td><strong>Elective modules</strong></td>
<td>according to the chosen specialisation</td>
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</table>
Bachelor of Science Bachelor of Science Nutrition, Health, Food Business

**Specialisation Food Business**

|---------|---------------------|--------------------------|-----------------------------|-------------------------------|-----------------|

<table>
<thead>
<tr>
<th>5. Sem.</th>
<th>Bachelor Thesis</th>
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</table>

<table>
<thead>
<tr>
<th>Internship</th>
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|---------|-------------|-----------------------------|---------------------------------|----------------------|-----------------------------|

|---------|--------------------------------|--------------------------------------------|-------------------|-----------------------------------------------|----------------|

<table>
<thead>
<tr>
<th>2. Sem.</th>
<th>Research Methods I</th>
<th>Food Science I: Processed Food Products</th>
<th>Technology I</th>
<th>Economics II: Business Administration</th>
<th>Culture, Nutrition, Sustainability</th>
</tr>
</thead>
</table>

|---------|-----------------------------------------------|-------------------------------|---------------------------------|---------------------------------|-----------------|

Structure of the programme BSc Nutrition, Health, Food Business
Bachelor of Science Bachelor of Science Nutrition, Health, Food Business  

*Specialisation Food Assessment*

<table>
<thead>
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<tbody>
<tr>
<td>5. Sem.</td>
<td>Bachelor Thesis</td>
<td>Internship</td>
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<tr>
<td>2. Sem.</td>
<td>Research Methods I</td>
<td>Food Science I: Processed Food Products</td>
<td>Technology I</td>
<td>Economics II: Business Administration</td>
<td>Culture, Nutrition, Sustainability</td>
</tr>
</tbody>
</table>
## Bachelor of Science Bachelor of Science Nutrition, Health, Food Business

**Specialisation Nutrition and Health**

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>2. Sem.</td>
<td>Research Methods I</td>
<td>Food Science I: Processed Food Products</td>
<td>Technology I</td>
<td>Culture, Nutrition, Sustainability</td>
</tr>
<tr>
<td>5. Sem.</td>
<td></td>
<td>Bachelor Thesis</td>
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</tr>
</tbody>
</table>

Structure of the programme BSc Nutrition, Health, Food Business
### Module handbook

Attachment 1 of the special examination regulations of the Department Nutritional, Food and Consumer Sciences, Fulda University of Applied Sciences for the degree programme Bachelor of Science Nutrition, Health, Food Business from the 5. June 2013

**Abbreviations:**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>BScOe EGL</td>
<td>Bachelor of Science: Nutrition, Health, Food Business (Bachelor of Science Oecotrophologie: Ernährung, Gesundheit, Lebensmittelwirtschaft)</td>
</tr>
<tr>
<td>BScOe VVM</td>
<td>Bachelor of Science: Catering and Supply Management (Bachelor of Science Oecotrophologie: Verpflegungs- und Versorgungsmanagement)</td>
</tr>
<tr>
<td>SWS</td>
<td>weekly hours per semester (Semesterwochenstunden)</td>
</tr>
<tr>
<td>Std.</td>
<td>Hours (Stunden)</td>
</tr>
<tr>
<td>ECTS</td>
<td>European Credit Transfer System</td>
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