



**LUNDS UNIVERSITET**  
Lunds Tekniska Högskola

*Course syllabus*

# **Livsmedel och kost - Fysiologiska effekter och konsekvenser**

## **Food and Diet - Physiological Effects and Consequences**

**KLGN55, 7,5 credits, A (Second Cycle)**

**Valid for:** 2023/24

**Faculty:** Faculty of Engineering, LTH

**Decided by:** PLED B/K

**Date of Decision:** 2023-04-18

### **General Information**

**Main field:** Food Technology and Nutrition.

**Elective for:** B5-lm, MLIV2

**Language of instruction:** The course will be given in English

### **Aim**

To provide an in-depth understanding and scientifically based holistic approach to human nutrition and metabolism, focusing on how the food characteristics and components affect the body's functions and the risk of developing lifestyle-related diseases.

### **Learning outcomes**

*Knowledge and understanding*

For a passing grade the student must

- have knowledge regarding the anatomy and physiology of the gastrointestinal tract (digestion, secretion, absorption and motility)
- have knowledge about metabolic regulation and differences in regulation between the fasting and post-absorptive stages
- have in-depth knowledge of the relationship between diet and health, in the short and long term, based on a holistic perspective regarding prevention of diet-related metabolic

diseases

- understand how the diet can affect the intestinal microbiota, and have knowledge of how indigestible food components and microbiota composition can affect metabolism and health beyond the intestine
- have knowledge regarding differences in nutritional needs for special groups in society (children, elderly, athletes)

#### *Competences and skills*

For a passing grade the student must

- be able to describe and assess the importance of food properties to maintain health throughout life
- be able to in written and oral clarify and discuss current research in food and diet within a selected field related to nutrition and health
- have the ability to independently and in a group plan, report and discuss results and conclusions from practical moments and scientific literature

#### *Judgement and approach*

For a passing grade the student must

- have the ability to critically analyze and evaluate information about the properties of food and diets and their potential health effects
- show the ability to teamwork where each member gets an assignments that is gathered in a comprehensive team presentation

## **Contents**

- the anatomy and physiology of the gastrointestinal tract
- metabolic regulation including differences depending of fasting and post-absorptive stages, as well as differences due to circadian variations
- relationship between diet and lifestyle-related diseases
- specific nutritional needs for certain groups, such as children, aged people, athletes
- how the intestinal microbiota is affected by the diet, and how indigestible food components and the microbiota can have effects linked to metabolic regulation and health beyond the intestine
- current research on antidiabetic properties of specific diets, foods and food components, including related effects on brain function

## Examination details

**Grading scale:** TH - (U,3,4,5) - (Fail, Three, Four, Five)

**Assessment:** All three parts of the examination must be passed in order to receive a passing grade on the course. The course grade (3, 4 or 5) is set by the grade on the final exam.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

### Parts

**Code:** 0119. **Name:** Case Studies.

**Credits:** 2. **Grading scale:** UG. **Assessment:** Active participation in case studies. Written assignment and oral presentation in group.

**Code:** 0219. **Name:** Practical.

**Credits:** 1. **Grading scale:** UG. **Assessment:** Active attendance at practical and panel debate.

**Code:** 0319. **Name:** Exam.

**Credits:** 4,5. **Grading scale:** TH. **Assessment:** Individual written exam.

## Admission

### Admission requirements:

- KLG30 Food Chemistry and Nutrition

**The number of participants is limited to:** No

**The course overlaps following course/s:** KNLN01

## Reading list

- John W. Erdman Jr., Ian A. Macdonald, Steven H. Zeisel: Present Knowledge in Nutrition. Wiley-Blackwell, 2012, ISBN: 9781119946045.  
<https://onlinelibrary.wiley.com/doi/book/10.1002/9781119946045>.
- Susan A Lanham-New, Ian A Macdonald, Helen M Roche: Nutrition and Metabolism. Wiley-Blackwell, 2011, ISBN: 1405168080.  
<https://onlinelibrary.wiley.com/doi/book/10.1002/9781444327779>.
- Scientific articles and electronic resources.

## Contact and other information

**Course coordinator:** Anne Nilsson, [anne.nilsson@food.lth.se](mailto:anne.nilsson@food.lth.se)

**Course coordinator:** Juscelino Tovar, [juscelino.tovar@food.lth.se](mailto:juscelino.tovar@food.lth.se)

**Course homepage:** <https://www.ple.lth.se/en/>