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:

- KLGN30 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
Course coordinator: Juscelino Tovar, juscelino.tovar@food.lth.se
Course homepage: https://www.ple.lth.se/en/