



Wageningen University		Nutrition and Health part 1: Macronutrients and Overnutrition (HNE-52802)		
Course description	Learn how our diet impacts our current and future health, with a focus on health problems related to overnutrition.			
Domain	Nutrition and Health			
Keywords	nutrition	macronutrients	health	metabolism
Prerequisites	Basic biology			
Level	Bachelor 1			
Language	English			
Number of credits and workload	2 credits	4-6 hrs per week		56 hrs in total
Semester period and Start date course	Semester 2	Start date: Self-paced, no start date		
Application deadline	1-Apr-19			
Full course description	<p>NUTR101x is a general nutrition course that covers the relation between nutrition and human health. The course will get you introduced into the chemistry of the three macronutrients: fat, carbohydrate and protein. It will address how macronutrients are absorbed, stored, and metabolized for energy and discuss how dietary fat, carbohydrate and protein may affect human health. Moreover, it will carefully analyze energy homeostasis and the regulation of body weight, and provide ample coverage of the topic of obesity. The course will also introduce you into Nutritional Science and the different methodologies employed in nutritional research.</p> <p>Week 1: Basic principles. Nutritional science is based on careful scientific research. In the first week you will learn about the different study designs that are used in nutrition research. Furthermore you will see how our digestive tract works!</p> <p>Week 2: Carbohydrates. Introduction to the basics of carbohydrates: What are the different types of carbohydrates? What is their chemical structure? What is the carbohydrate content of common foods? How are carbohydrates digested and absorbed? How are carbohydrates metabolized in the body?</p> <p>Week 3: Carbohydrates and health. We will focus on the health effects of one specific group of carbohydrates: sugar. What is sugar? How much sugar do we actually eat?</p>			

What are the possible health effects of sugar? What can we do to lower sugar intake? What are artificial or non-nutritive sweeteners and can we trust some of the claims made about non-nutritive sweeteners? What are the health effects of dietary fiber? Finally, we will look at two conditions where the body has trouble processing (certain) carbohydrates.

Week 4: Lipids. What is the chemical composition of dietary fats? What is the fat content of common foods? How is dietary fat digested and absorbed? What happens to fat once it is taken up into our body? How do we store and liberate fat? What are essential fatty acids?

Week 5: Lipids and Health. This week is about cardiovascular (heart) disease and risk factors. Which risk factors for heart disease are amenable to dietary changes? How important is blood cholesterol as a risk factor for heart disease? To what extent can we modulate blood cholesterol levels via changes in dietary fat composition? What are the impacts of saturated fatty acids, trans fatty acids and omega-3 fatty acids?

Week 6: Proteins and Health. What is the chemical composition of dietary protein? What is the protein content of common foods? How is dietary protein digested to amino acids and absorbed? What happens to amino acids once they are taken up into our body? What do we mean with protein quality? What specific health effects can be attributed to dietary protein?

Week 7: Energy homeostasis and energy balance. How do we regulate our food intake? How do we estimate the caloric content of foods? What determines our energy expenditure? What happens to energy expenditure and energy balance when we gain or lose weight?

Week 8: Weight management and Obesity. How do we assess body fat levels? What are the criteria for being overweight or obese? What are possible health risks associated with obesity? What are causes of obesity and what can we do about it?

Platform and link to course description

edX

<https://screenshots.firefox.com/di4xRXXHbjPw5pFd/www.edx.org>

Course description in study guide

<https://ssc.wur.nl/Handbook/Course/HNE-52802>

Lecturer(s)

Sander Kersten

Extra Course information

Wageningen online courses are fully self-paced and no lecturer is involved. Students must be able to manage their study process independently.

Virtual Exchange Global Alliance

Picture			
Final examination date and time /period	tbd	tbd	July/Aug 2019
Examination registration deadline or drop-out deadline	Examination registration before 2-Jan-2019 Drop- out deadline Not applicable		
Type of examination	Written exam on home campus		
Midterm examination?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		
Specific rules for examinations			
Resit? and date	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	February 2020	
Previous exam papers available?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no		
Grade release (and transcript release if more than 1 week after grade release)	31-8-2019		

Available Places 50 *(give details if applicable, otherwise each participating university gets an equal part of the available places)*

	Interested	(Maximum) places per university
Adelaide	<input type="checkbox"/> yes	Click or tap here to enter number

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ANU	<input type="checkbox"/> yes	Click or tap here to enter number
EPFL	<input type="checkbox"/> yes	Click or tap here to enter number
HKUST	<input type="checkbox"/> yes	Click or tap here to enter number
Leiden	<input type="checkbox"/> yes	Click or tap here to enter number
Rice	<input type="checkbox"/> yes	Click or tap here to enter number
TU Delft	<input type="checkbox"/> yes	Click or tap here to enter number
UQ	<input type="checkbox"/> yes	Click or tap here to enter number
Wageningen	<input type="checkbox"/> yes	Click or tap here to enter number