



**Karolinska
Institutet**

Course syllabus for

Physiology 3 - Exercise, 4.5 credits

Fysiologi 3 - Tema träning, 4.5 hp

This course has been cancelled, for further information see Transitional provisions in the last version of the syllabus.

Please note that the course syllabus is available in the following versions:

Spring2012 , Autumn2014

Course code	1SY034
Course name	Physiology 3 - Exercise
Credits	4.5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Not applicable
Level	GX - First cycle
Grading scale	Pass, Fail
Department	Department of Laboratory Medicine
Decided by	Programnämnd 3
Decision date	2011-12-09
Revised by	Programnämnd 3
Last revision	2012-02-08
Course syllabus valid from	Spring 2012

Specific entry requirements

General admission requirements.

Objectives

The aim of the course is for the student to acquire knowledge in the area of exercise physiology concerning, in the first place, the healthy human in order to, later during the education and in the future professional life, be able to apply this knowledge in order to prevent and treat disease. Learning outcomes On completion of the course, the student should be able to · account for contents in and scientific background to current recommendations on physical activity and show ability to explain and apply these recommendations in the prescription of physical activity on prescription to people in different ages without chronic disease and be able to describe inactivity and the relations between risk of disease and physical inactivity · describe the flow, conversion and release of energy, from food to the cell's energy-intensive processes, the body's different ways to store and transport energy, be able to discuss the handling of energy in starvation and surplus of food intake, respectively, and at physical work of various intensity and duration, and be able to describe and apply various measurement methods for physical activity and energy consumption · discuss limiting factors for various types of occupational

capacity (aerobic, anaerobic, strength) and be able to describe and apply various types of tests for work capacity · account for metabolic, neuromuscular, cardiovascular and pulmonary effects of fitness and strength training and for training principles and be able to apply various methods for control of exercise intensity. · account for models of description, at a general level, and methods for measurement of the composition of the body and be able to apply skin-fold measurement. · give adequate nutrition advice at different grades of physical activity

Content

The course contains the following parts that are included in the theme Training: · General recommendations on physical activity · General effects of physical activity on the different functions and organ systems of the body · Physical activity epidemiology - The inactivity in the population - Inactivity, and the relation to disease among the population · Physical activity on a prescription in disease prevention and disease treatment to different categories such as children, youths, adults, elderly, women, men, and pregnant women without chronic medical conditions - an introduction · Energy metabolism, from cell to whole body level · Occupational capacity, limiting factor and tests - an introduction · Fitness training - physiological background, limiting factors for aerobic work-out, training principles, fitness tests and control instruments for intensity such as heart frequency measurement, estimation of experienced effort according to Borg and MET measurements · Strength training - physiological background, limiting factors for strength, training principles, strength tests and muscle soreness · Body composition and skin-fold measurement · Overtraining · Physical activity and training for children, youths, elderly, women and men, and pregnant · Physical activity and nourishment/liquid

Teaching methods

The teaching is given as lectures, laboratory sessions, group assignments and seminars.

Examination

The course is examined according to the following: · Examination is arranged in the form of written examination. Compulsory participation for a pass grade on a course is: · Seminars, group examinations and laboratory sessions are compulsory. A replacement session for regular a laboratory session is offered. In case of absence from the laboratory sessions, information about a complementary assignment is given by the course coordinator. In case of failure in the regular examination, the student is given the opportunity to return to a make-up examination during the same semester. After that, the student has the possibility to be examined on two more occasions each semester during the future semesters. The student has a possibility of, all in all, six examinations.

Transitional provisions

Examination will be provided during one year after a close-down of the course or a new syllabus.

Other directives

Course evaluation is conducted according to the guidelines established by the Board of Education at KI, and based on established evaluation routines within the programme.

Literature and other teaching aids

ACSM

ACSM Resource manual for guidelines for exercise testing and prescriptions. Online.
<http://www.LWW.com>.

9:e : Lippincott, Williams & Wilkins, 2009

ISBN:0-7817-4591-8

[Library search](#)

Wilmore, Jack H.; Costill, David L.; Kenney, W. Larry.

Physiology of sport and exercise

4. ed. : Champaign, IL : Human Kinetics, cop. 2008 - xvii, 574 s.

ISBN:978-0-7360-5583-3 (inb.) LIBRIS-ID:10652260

URL: [Länk](#)

[Library search](#)

FYSS 2008 : fysisk aktivitet i sjukdomsprevention och sjukdomsbehandling

Stockholm : Statens folkhälsoinstitut, 2008 - 613 s.

ISBN:978-91-7257-543-1 LIBRIS-ID:10734161

URL: <http://www.fyss.se/>

[Library search](#)