



## LUNDS UNIVERSITET

Medicinska fakulteten

Board of Rehabilitation Sciences Education, NRU

# IDRN09 Human performance in extreme environments

7.5 Higher education credits

Second cycle / A1F

## General Information

Main field

Sport Sciences

Subject

Exercise physiology focusing on the effects of environmental factors on human physical performance capability.

Type of course

Compulsory course in the Master of Sport Sciences programme, and can be given as a special course for professionals. The courses within the programme have to be studied in the stated order. The course complies with the regulations of the Higher Education Ordinance (1993:100 with later amendments).

Language of instruction

English

## Learning Outcomes

The overall aim of the course is to provide students with advanced knowledge and skills in exercise physiology and the effects of environmental factors on human physical work performance.

Knowledge and understanding

On completion of the course the student shall be able to

- describe in detail the abilities and limitations of the human body to cope with extreme environmental conditions,
- independently analyse and reflect on critical physical and physiological factors that affect human performance in extreme environments,
- apply physical and physiological principles to understand and predict environmental effects on human performance.

Skills and abilities

On completion of the course the student shall be able to

- demonstrate ability to perform simple measurements in exercise and environmental physiology,
- experience personal exposure to selected extreme environments.

Adopted by the NRU on 2 February 2010  
Valid from 1 January 2010

Judgment and approach

On completion of the course the student shall be able to

- independently reflect and show awareness of individual variation, resources and needs related to the ability to cope with and perform in extreme environments and critically interpret information,
- reflect about his/her personal development and the need of further knowledge in the subject area.

## Course Content

The course will contribute to increased knowledge and understanding of selected topics in the area of exercise physiology and environmental physiology. Specific course topics will include

- limits of human performance
- human heat balance and heat exchange
- performance in hot and cold environments
- clothing and performance
- prediction of performance in sports
- swimming and diving
- performance at high altitude

The theoretical parts of the course are supplemented with group activities, laboratory work and a parallel individual assignment.

Subjects examined

Human performance in extreme environments 7.5 credits

## Instruction and Examination

Instruction

The course includes lectures, group activities and laboratory work. Supervision is done from an internet-based platform (LUVIT). Attendance at lectures, group activities, laboratory work and LUVIT discussions is compulsory.

Examination

Examination consists in oral and written reports from the group work and laboratory work and an individual written examination.

## Grades

Grades are set for a completed course. One of the grades Pass with distinction, Pass or Fail is awarded.

A student who has passed a course will be given a certificate to that effect by the higher education institution, on request.

## Admission Requirements

Besides the basic eligibility, i.e. a Bachelor's degree of at least 180 credits or an equivalent foreign degree, a special qualification in the English language, i.e. English B or its equivalent, is required. The courses IDR02, IDR03 and IDR04 must be completed and passed.

## Literature

See appendix

## Further Information

Number of examinations, new examiner etc.

### **Theoretical courses**

One examination and one opportunity to retake the examination are arranged soon after the course. Students who do not achieve a pass on either of these occasions will be able to retake the examination on a later occasion. Students who have failed an examination on a theoretical course are entitled to retake the examination four times.

### **New examiner**

A student who has failed two examinations on a course or sub-course is entitled to have another examiner appointed, unless there are special reasons to the contrary. (SFS 2006:1053) The request is made to the Programme Director.

## Appendix: Literature

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Holmér, I. (2009). Human performance in extreme environments. Kompendium, Lund University,. (91 pages).

Åstrand, P-O., Rohdahl K., Dahl H., Strömme S. (2003). Textbook of work physiology: Physiological bases of exercise. Champaign, IL: Human Kinetics. (541 pages, selected chapters)

Additional literature up to 100 pages may be added.