Sports and exercise physiology

IDROTTS- OCH ARBETSFYSIOLOGI

15 credits - 15 högskolepoäng

Course code: MAIDAF
Level: Master's level
Main Field of Study: Sport Science
Progressive specialization: A1N
Disciplinary Domain: Sports
Subject group: Sport Science
Established by: Utbildnings- och forskningsnämndens kursplaneutskott 2026-05-27
Version: 5
Valid from: Spring semester 2027

Entry requirements

A degree of at least 180 higher education credits in the main fields of sports/sports science, physiotherapy, medicine, biomedicine, nutrition, or equivalent, including at least 22.5 higher education credits in physiology, anatomy, or kinesiology.

English 6 or English Level 2, or the equivalent.

Intended learning outcomes

After completing the course, the student is expected to be able to:

Knowledge and Understanding

1. integrate and apply knowledge to address complex issues in exercise physiology,

Skills and Abilities

2. discuss different theoretical frameworks related to complex problems in exercise physiology,

Judgement and Approach

3. demonstrate advanced knowledge of methodological approaches in exercise physiology and compare the advantages and limitations of different testing methods,

4. independently carry out an in-depth project addressing an exercise physiology–related research question and critically evaluate experimental designs and results.

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Course content

The course provides an advanced overview of the central physiological mechanisms underlying physical activity, training adaptation, and performance. Particular emphasis is placed on integrating theoretical knowledge with practical application and current research.

The course is structured around the following thematic areas related to training and performance, including energy metabolism, circulation and respiration, mechanisms of fatigue, environmental physiology, nutrition and dietary supplements, physical activity in relation to health and disease, as well as physiological and biochemical assessment methods.

A central component of the course is its connection to current research, including the application and evaluation of experimental and diagnostic methods, as well as the integration of theory with practical sport and exercise settings.

Progression

The course comprises studies at the advanced level, which entails a deeper level of knowledge compared with undergraduate studies. This includes an increased level of complexity and abstraction in the application of theory, greater demands on the ability to communicate, critically discuss, and integrate knowledge, as well as increased independence in conducting a written in-depth project within a self-selected area.

Examination

(2701) 5 hp, Skriftlig tentamen, avseende lärandemål 1, Tvågradig skala
(2701) 5 credits, Written examination, regarding learning outcomes 1, Two-grade scale

(2702) 10 hp, Skriftlig och muntlig redovisning av uppsats, avseende lärandemål 2-4, Tregradig skala
(2702) 10 credits, Written and oral presentation of the thesis, regarding learning outcomes 2-4, Three-grade scale

Student's rights and obligations are regulated according to GIH's examination guidelines.

At the start of the course, students will receive information on examination formats and grading criteria for each component. Grades must be reported in Ladok no later than three weeks after completion of each module.

For each exam, one ordinary examination session and one ordinary re-examination session are offered.
The ordinary re-examination (session 2) is offered no earlier than two weeks and no later than six weeks after the student has received the result from the first examination.

In addition to the ordinary exam and re-exam, further re-examinations (session 3 or more) are offered for both theoretical and practical tests. At least three examination opportunities must be provided within one year for each exam in a course period.

If a student has a decision from GIH regarding special pedagogical support due to disability (NAIS certificate) or other reasons, the examiner has the right to provide an adapted examination or allow the student to complete the assessment in an alternative form.

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Grades

The course is graded according to the following scale: Pass with Distinction (Väl godkänt), Pass (Godkänt), or Fail (Underkänt).

To obtain a final grade of Pass, a passing grade is required for all examinations.

To obtain a final grade of Pass with Distinction, a Pass is required on the Written Examination (5 credits) and a Pass with Distinction on the Written and Oral Presentation of the thesis (10 credits).

Student influence and course evaluation

The course is evaluated in accordance with GIH's Guidelines for monitoring and quality assurance of courses and programs.

Type of instruction

The course is designed as a semi-distance course based on blended learning principles, with joint teacher-led sessions concentrated into a number of days for each thematic area.

The course is taught in English.

Literature and list of references

The course is based on:

Kenney, W.L., Wilmore, J.H., & Costill, D.L. (2025). *Physiology of sport and exercise* (9th ed.). Champaign, IL: Human Kinetics.

- selected review articles (approximately 3–5 per thematic area)
- student-led in-depth assignments
- additional original research articles