UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Exercise Physiology and Neurobiology G1F

7.5 credits

Course code: BM344G
Version number: 1
Valid from: 1 January 2027
Ratified by: Curriculum Committee for Health Sciences
Date of ratification: 20 May 2026

1. General information about the course

The course is provided by the University of Skövde and is named Exercise Physiology and Neurobiology G1F (Träningsfysiologi och neurobiologi G1F). It comprises 7.5 credits and is a first-cycle course. The level of progression is G1F.

The course is a part of the main field of study in Biomedicine. The disciplinary domain of the course is Natural Sciences.

2. Entry requirements

The course has the following entry requirements: passed courses totalling at least 40 credits in one or more of the subjects of Biomedicine, Bioscience or Chemistry, of which KE118G Laboratory Basic Course G1N must be included (or the equivalent).

Additional requirements: attended BM304G Human Physiology and Metabolism G1F with a passed grade on the mode of assessment 1003 Supervised written examination 1 and a passed grade on the mode of assessment 2003 Supervised written examination 2 (or the equivalent).

3. Course content

The course covers exercise physiology from a whole-body perspective, focusing on energy metabolism and physical performance in relation to muscle physiology, as well as the connection between physical activity, health, and nutrition. It also includes methods for measuring cardiovascular fitness, strength, and body composition, along with their advantages and disadvantages. Furthermore, the course explores how the nervous system at the molecular level influences physiological states and behaviors. As part of the course, students will conduct an experiment in exercise physiology and neurobiology, analyze the data, and present the results. Ethical aspects within exercise physiology and neurobiology are also addressed.

4. Objectives

After completion of the course, the student shall be able to:

- explain exercise physiology from a whole-body perspective, as well as the importance of nutrition for performance, body composition, and brain function
- describe in detail a chemical synapse as well as the structure and function of common neurotransmitters in the nervous system, and how they affect bodily functions and behavior
- produce, compile, and evaluate scientific information in response to a specific research question within exercise physiology and neurobiology, and present the results

5. Examination

The course is graded A (Excellent), B (Very good), C (Good), D (Satisfactory), E (Sufficient) or F (Fail).

The examinations of the course consist of the following modes of assessment:

- **On-campus supervised written examination**
  4.5 credits, grades: A/B/C/D/E/F (determines the final grade)
- **Laboratory assignments**[1]
  3 credits, grades: G/U

[1] Examination of the laboratory assignments includes a lab quiz (dugga). The dugga aims to ensure the student has the necessary knowledge of the safety routines for the laboratory work as well as has sufficient theoretical knowledge to be able to perform laboratory in a professional manner. To be allowed to participate in the laboratory work the student must first pass the dugga.

Students with a permanent disability who have been approved for directed educational support may be offered adapted modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of lectures, group assignments and laboratory sessions.

The teaching is conducted in English.

7. Course literature and other educational materials

McArdle, W. D., Katch, F. I. & Katch, V. L. (2023). *Exercise physiology: Nutrition, energy, and human performance* (9th ed.). Philadelphia: Wolters Kluwer Health. ISBN 9781975217303.

Silverthorn, D. (2018). *Human physiology: An integrated approach, global edition* (8th ed.). Harlow: Pearson Education Limited. ISBN 9781292259543.

Scientific articles are available on the learning platform.

Latest edition of the course literature shall be used.

8. Student influence

Student influence in the course is ensured by means of course evaluation. The students are informed about the results of the evaluation and potential measures that have been taken or are planned, based on the course evaluation.

9. Additional information

The content of the course corresponds completely or partially with the following course(s) and cannot be included in the required credits of a degree qualification:

- BM543G - Neurobiology and Exercise Physiology G2F 7.5 credits
- BM550G - Exercise Physiology and Neurobiology G2F 7.5 credits

Further information about the course, as well as national and local governing documents for higher education, is available on the website of the University of Skövde.