UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Pathophysiology and Pharmacology G2F

20 credits

Course code: BM544G
Version number: 4.2
Valid from: 1 July 2026
Ratified by: Curriculum Committee for Health Sciences
Date of ratification: 29 June 2026

1. General information about the course

The course is provided by the University of Skövde and is named Pathophysiology and Pharmacology G2F (Patofysiologi och farmakologi G2F). It comprises 20 credits and is a first-cycle course. The level of progression is G2F.

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 KE118G Laboratory basic course G1N and attended BM304G Human Physiology and Metabolism G1F with a passed grade on the examination 1003 Supervised written examination 1, 3 credits and a passed grade on the examination 2003 Supervised written examination 2, 3 credits and a passed grade on the examination 3003 Supervised written examination 3, 3 credits and a passed grade on the examination 4003 Individual assignment, 3 credits (or the equivalent).

Since the level of progression of the course is G2F, the prerequisites are passed courses of at least 60 credits in one or more of the subjects of Biomedicine, Bioscience or Chemistry, where the courses above are included.

3. Course content

The course focuses on the most common diseases of the nervous system, the cardiovascular system, the respiratory system and the endocrine system. Pharmacology is also covered with an emphasis on the pharmacokinetics and mechanisms of action of drugs within a number of areas; neuropharmacology, analgesics, cardiovascular pharmacology, respiratory pharmacology, endocrine pharmacology, anti-inflammatory pharmacology and antimicrobials. The course also includes studies in general pharmacology and drug development as well as laboratory work within pharmacology. Pathophysiological and pharmacological differences between the sexes are highlighted.

4. Objectives

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

- describe the principles of pharmacodynamics and pharmacokinetics
- describe the relationship between pathophysiology, symptoms, and diagnosis for common disorders of the nervous system, and account for the mechanisms of action at the molecular level, the effects, applications and side effects of drugs affecting the nervous system, including analgesics
- describe the relationship between pathophysiology, symptoms, and diagnosis for common disorders of the cardiovascular and respiratory systems, and account for the mechanisms of action at the molecular level, the effects, applications and side effects of drugs affecting the cardiovascular and respiratory systems
- describe the relationship between pathophysiology, symptoms, and diagnosis for common disorders of the endocrine system, and account for the mechanisms of action at the molecular level, the effects, applications and side effects of drugs affecting the endocrine system
- describe the mechanisms of action at the molecular level, the effects, applications and side effects of antimicrobials and anti-inflammatory drugs
- describe the mechanisms underlying drug interactions and their importance
- describe the process of drug development and clinical trials
- plan and perform laboratory work in a safe and professional manner
- collect and analyse data from laboratory work and present results and conclusions in writing, with the correct use of references

5. Examination

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

The final grade is issued first when all examinations have reached at least grade E/G (Pass).

An average grade of the supervised written examinations 2 and 3 determines the final grade.

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

- **Supervised written examination 1**
  1.5 credits, grades: G/U
- **Supervised written examination 2**
  4.5 credits, grades: A/B/C/D/E/F
- **Supervised written examination 3**
  3.5 credits, grades: A/B/C/D/E/F
- **Supervised written examination 4**
  3 credits, grades: G/U
- **Supervised written examination 5**
  1.5 credits, grades: G/U
- **Seminar assignment 1**
  1 credit, grades: G/U
- **Seminar assignment 2**
  0.5 credit, grades: G/U
- **Seminar assignment 3**
  1.5 credits, grades: G/U
- **Laboratory assignments**[1]
  3 credits, grades: G/U

[1] Examination of the laboratory assignments includes a 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, laboratory sessions and seminars/group discussions.

The teaching is conducted in English.

7. Course literature and other educational materials

Sorenson, M., Quinn, L. & Klein, D. (2021). *Pathophysiology: Concepts of human disease*. Harlow: Pearson Education. ISBN 9780136873624.

Whalen, K. (2022). *Lippincott illustrated reviews: Pharmacology* (8th ed.). Philadelphia: Lippincott Williams & Wilkins. ISBN 9781975170585.

Scientific articles and other relevant literature may be added 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

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.