

Pathophysiology and Immunology

Title	Pathophysiology and Immunology
Semester	E2022
Master programme in	Medicinal biology / Molecular Health Science
Type of activity	Course
Teaching language	English
Study regulation	Read about the Master Programme and find the Study Regulations at ruc.dk Læs mere om uddannelsen og find din studieordning på ruc.dk

REGISTRATION AND STUDY ADMINISTRATIVE

Registration	Sign up for study activities at stads selvbetjening within the announced registration period, as you can see on the Studyadministration homepage. When signing up for study activities, please be aware of potential conflicts between study activities or exam dates. The planning of activities at Roskilde University is based on the recommended study programs which do not overlap. However, if you choose optional courses and/or study plans that goes beyond the recommended study programs, an overlap of lectures or exam dates may occur depending on which courses you choose.
Number of participants	
ECTS	10
Responsible for the activity	Jesper Troelsen (troelsen@ruc.dk)
Head of study	Lotte Jelsbak (ljelsbak@ruc.dk)
Teachers	
Study administration	INM Studieadministration (inm-studieadministration@ruc.dk)
Exam code(s)	U60181

ACADEMIC CONTENT

Overall
objective

This is a lecture-based course covering Pathophysiology and Immunology

In the pathophysiology part the students have to learn and deduce the relevant knowledge in the physiology of various human diseases, including blood and vascular diseases, cardiovascular diseases, respiratory diseases, diseases of the stomach, liver and pancreas, kidney diseases and the salt and water imbalance, endocrine gland diseases, diseases of musculoskeletal diseases, in the nervous system as well as pain and trauma.

The immunology part: The relevant knowledge in the structure of the immune system, antibody production, the MHC complex, T cell functions, abnormal immune responses, immunological techniques, and their uses will be educated and deduced.

Detailed
description of
content

Themes in the pathophysiology part:

Various human diseases:

- Blood and vascular diseases,
- Cardiovascular diseases,
- Respiratory diseases
- Diseases of the stomach, liver and pancreas,
- Kidney diseases and the salt and water imbalance
- Endocrine gland diseases
- Diseases of musculoskeletal diseases, in the nervous system as well as pain and trauma.

Clinical cases will for the different diseases will presented and case-based teaching on the diseases will be included.

Themes in the immunology part:

- structures of the immune system
- antibody production
- the MHC complex
- T cell functions
- abnormal immune responses
- immunological techniques

Course
material and
Reading list

- Porth's Essentials of Pathophysiology 5th Edition by Tommie L Norris, and Peter Wood: Understanding immunology (I), 3.ed,
- power points and other material on Moodle.

Overall plan
and expected
work effort

This is a lecture-based course covering Pathophysiology and Immunology

2/3 of the lectures will taught by medical doctors which are specialists in the topics. Most of the immunology lectures is given by INM teachers.

Clinical cases will be used to train the course participants in clinical deductions and diagnosis.

- Exam 5 hrs
- Lectures 58 hrs
- Seminars based on clinical cases 4 hrs
- Preparation 203 hrs

- Total 270 hrs

Format

Evaluation
and feedback

The course includes formative evaluation based on dialogue between the students and the teacher(s).

Students are expected to provide constructive critique, feedback and viewpoints during the course if it is needed for the course to have better quality. Every other year at the end of the course, there will also be an evaluation through a questionnaire in SurveyXact. The Study Board will handle all evaluations along with any comments from the course responsible teacher.

Furthermore, students can, in accordance with RUCs 'feel free to state your views' strategy through their representatives at the study board, send evaluations, comments or insights from the course to the study board during or after the course

Programme

Programme for the course.

Lectures in immunology:

- Innate and adaptive immune system
- B and T lymphocytes, MHC
- Lymphocyte development + lymphatic system
- Cellular immunity
- Antibody production
- Tolerance / autoimmunity
- Allergy, AIDS, Transplantation
- Advanced flow cytometry and cell typing
- Immunological methods

Lectures in pathophysiology

- Diseases of the stomach, liver and pancreas
- Blood diseases
- Medical cancer treatment
- Cardiovascular Diseases
- Kidney diseases. Salt and water balance
- Nutrition
- Diseases of the nervous system
- Endocrine diseases
- Diseases of muscles and joints
- Respiratory diseases*
- Patophys. Reproductive diseases
- Seminars in clinical cases.

ASSESSMENT

Overall
learning
outcomes

After completing the course, the students will be able to:

- identify and describe pathophysiological conditions in the organism as well as in various tissues
- identify and describe the structure and function of the immune system
- discuss how experiments have contributed to the current understanding of pathophysiology and immunology
- describe the development of various diseases
- conduct a theoretical review of the latest scientific literature in the field of pathophysiology and immunology
- formulate new scientific hypotheses as a starting point for a thesis project in pathophysiology / immunology

Form of examination	Individual written invigilated exam. The duration of the exam is 5 hours. Permitted support and preparation materials for the exam: None. Assessment: 7-point grading scale. Moderation: Internal co-assessor.
Form of Re-examination	Individual oral exam with time for preparation. Time for preparation including time to pick a question by drawing lots: 45 minutes. Time allowed for exam including time used for assessment: 45 minutes. Permitted support and preparation materials: None. Assessment: 7-point grading scale. Moderation: Internal co-assessor.
Type of examination in special cases	
Examination and assessment criteria	Regular exam: 5hrs written exam in two parts: a immunology part and pathology part. Immunology part is handed in after 1.5 hrs of the exam. The pathophysiology part weighs 70 % of the exam, immunology part 30%. Reexam is oral with preparation time. The examination is based on two questions in pathophysiology and one in immunology. The student starts the exam with short presentations covering the questions, after which the examination takes place as a dialogue. The entire syllabus can be used for the examination. It will be assessed to which degree the student demonstrates to ability to: • identify and describe pathophysiological conditions in the human organism as well as in various tissues. • identify and describe the structure and function of the immune system • discuss how experiments have contributed to the current understanding of pathophysiology and immunology • describe the development of various diseases • explain how diseases are diagnosed and can be treated. • access basis clinical data from patient cases to identify diseases and treatment options. The assessment of the oral re-exam is based on the student's ability to meet the criteria mentioned above and their ability to clearly present and communicate the given topics
Exam code(s)	Exam code(s) : U60181

Course days:

Hold: 1

Pathophysiology and Immunology (MHS)

time	05-09-2022 08:15 til 05-09-2022 10:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	15.0-003 - auditorie 15 (68)
Teacher	Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS)

time	07-09-2022 08:15 til 07-09-2022 10:00
location	11.2-047 - gl. natfagsal (65)
Teacher	Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS)

time	12-09-2022 08:15 til 12-09-2022 10:00
location	11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time	14-09-2022 08:15 til 14-09-2022 10:00
location	11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time	19-09-2022 08:15 til 19-09-2022 10:00
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location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 21-09-2022 08:15 til
21-09-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 26-09-2022 08:15 til
26-09-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Teacher Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS) - Room change due to NATDAG

time 28-09-2022 08:15 til
28-09-2022 10:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

location 45.2-051 - teorirum 45.2 (90)

Teacher Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS)

time 03-10-2022 08:15 til
03-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 05-10-2022 08:15 til
05-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 10-10-2022 08:15 til
10-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Teacher Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS)

time 12-10-2022 08:15 til
12-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Teacher Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS)

time 17-10-2022 08:15 til
17-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 19-10-2022 08:15 til
19-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 24-10-2022 08:15 til
24-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Teacher Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS)

time 26-10-2022 08:15 til
26-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Teacher Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS)

time 31-10-2022 08:15 til
31-10-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 02-11-2022 08:15 til
02-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 07-11-2022 08:15 til
07-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 09-11-2022 08:15 til
09-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 14-11-2022 08:15 til
14-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 16-11-2022 08:15 til
16-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 21-11-2022 08:15 til
21-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 23-11-2022 08:15 til
23-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 28-11-2022 08:15 til
28-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 30-11-2022 08:15 til
30-11-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 05-12-2022 08:15 til
05-12-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 07-12-2022 08:15 til
07-12-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 12-12-2022 08:15 til
12-12-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 14-12-2022 08:15 til
14-12-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology (MHS)

time 19-12-2022 08:15 til
19-12-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Teacher Louise Torp Dalgaard (ltd@ruc.dk)

Pathophysiology and Immunology (MHS)

time 21-12-2022 08:15 til
21-12-2022 10:00

location 11.2-047 - gl. natfagsal (65)

Pathophysiology and Immunology - Exam (MHS)

time 13-01-2023 10:00 til
13-01-2023 15:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

location 04.1-06.1-014 - teorirum 04/06 (130)

Pathophysiology and Immunology - Reexam (MHS)

time 28-02-2023 08:15 til
28-02-2023 16:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt