



Exchange programme Vrije Universiteit Amsterdam

Vrije Universiteit Amsterdam - Exchange programme Vrije Universiteit Amsterdam - 2024-2025

Exchange

Vrije Universiteit Amsterdam offers many English-taught courses in a variety of subjects, ranging from arts & culture and social sciences, neurosciences and computer science, to economics and business administration.

The International Office is responsible for course approval and course registration for exchange students. For details about course registration, requirements, credits, semesters and so on, please [visit the exchange programmes webpages](#).

Pathophysiology of Heart and Circulatory System

Course Code	AB_1015
Credits	6
Period	P5
Course Level	200
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. J.M. de Winter
Examiner	prof. dr. J. van der Velden
Teaching Staff	dr. E.C. Eringa, dr. D.W.D. Kuster, prof. dr. P.L. Hordijk, prof. dr. R.A. Boon, dr. P. Koolwijk, dr. J.M. de Winter
Teaching method(s)	Seminar, Practical, Study Group, Lecture

Course Objective

The aim of this course is to provide students with insight into the functioning of the cardiovascular system, the pathogenesis of the major cardiovascular diseases and in the possibilities for therapeutic intervention. Pathomechanisms are discussed that can lead to the development of myocardial infarction and heart failure, mechanisms of genetic heart disease and the role of co-morbidities in cardiac disease.

Course Content

The course consists of the following subjects:

- Macrocirculation and atherosclerosis
- Microcirculation and vasoregulation
- Heart function and myocardial infarction
- Cardiomyopathies
- Angiogenesis and arteriogenesis

In the first part of the course, the properties of macrocirculation (atherosclerosis) and microcirculation (organ level) and their regulation are discussed, and the changes in the vessel wall that may lead to increased blood pressure and atherosclerosis. In the second part, the heart's action on molecule, cell and organ level are discussed, the abnormalities (pathomechanisms) that arise and different forms of acquired and inherited cardiac disease. In the third part, the regulation of the barrier function of blood vessels is discussed and the role of angiogenesis and arteriogenesis.

The following learning pathway is incorporated into this course:
Academic skills

Additional Information Teaching Methods

Lectures: 18 hours; Practical courses: 8 hours; Workgroups: 10 hours, self-study: 132 hours.

Method of Assessment

Exam: 100%
And mandatory presence practicals and workgroups

Literature

Cardiophysiology concepts, 2nd edition/3rd edition, Richard E Klabunde.

Additional Information Target Audience

Bachelor students Biomed, G&L, GZW, 2nd year or higher.

Additional Information

For students who will (possibly) choose the Master Cardiovascular Sciences, this course is strongly recommended.

Custom Course Registration

Workgroups and practicals: see Canvas.

Explanation Canvas

Practical manuals and study assignments are provided via Canvas.

Recommended background knowledge

Sufficient and demonstrable knowledge of the physiology and anatomy of the cardiovascular and respiratory system (e.g. Biomed course 'Human anatomy and physiology' or GZW course CRS).