



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](#).

Biochemistry

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| Course Code | XB_0030 |
| Credits | 6 |
| Period | P4+5 |
| Course Level | 200 |
| Language Of Tuition | English |
| Faculty | Faculty of Science |
| Course Coordinator | dr. D.J. Scholten |
| Examiner | dr. D.J. Scholten |
| Teaching Staff | dr. D.J. Scholten |
| Teaching method(s) | Seminar, Written partial exam, Lecture |

Course Objective

The interactive documents, lectures and tutorials will provide insight into the basic (bio-)chemical principles of the construction of living cells, the chemical structure of the cellular components and the way in which macromolecules (proteins, DNA, RNA, lipids) are used to make cells function. Furthermore, the way in which signalling in and between cells can take place and how these pathways can be modulated by chemical signalling substances and medicines will be discussed. Attention will be given to how cells extract energy from the breakdown of nutrients and how this energy is used for growth and cell division. The final topic of the course is the cytoskeleton and how this is involved in cell division.

Course Content

With the unraveling of the human genome and progress within the life sciences we learn more and more about the role of different biomolecules in important cellular processes. The course Biochemistry focuses on the important components of cells and their function. Subjects to be discussed are the different cell types, cell organelles, cellular components (proteins, DNA / RNA and lipids) and the building blocks that make up these macromolecules. Protein structure and function, signal transduction and the metabolism (enzymes, Michaelis-Menten kinetics, allosteric effects, metabolic / signal transduction pathways) will be discussed as well. In particular, the protein molecules involved in important cellular processes such as cellular communication, membrane transport, cell division and apoptosis will receive attention.

Additional Information Teaching Methods

Tutorials, and self-study (Digital books, canvas quizzes).

Method of Assessment

One partial exam and a final exam. Depending on the number of students one or both of the exams might change to an oral exam.

Literature

Alberts, B. e.a., Essential Cell Biology 5th ed, 2019

Additional Information Target Audience

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Second year Mathematics students in the biomedical sciences track.

Recommended background knowledge

Genetics (AB_1135) or a similar course.