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.

Structure Biology

Course Code	X_430080
Credits	6
Period	P5
Course Level	200
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	dr. S. Hennig
Examiner	dr. S. Hennig
Teaching Staff	dr. V.U. Chukhutsina, dr. S. Hennig
Teaching method(s)	Excursion, Seminar, Lecture

Course Objective

Obtaining insight into the molecular elements that form the basics for structure and function of biomolecules. Also, gaining of knowledge about the methods used to determine the structure and analyze the function of proteins.

Course Content

Central to this course are molecular properties of structural elements of DNA, lipids and proteins. The forces and interactions that determine their structure, function and flexibility will be discussed. The basics and applications of a number of techniques used to experimentally determine macromolecular structures as well as techniques to visualize dynamic structural changes will also be introduced. This includes crystallization followed by X-ray diffraction, NMR spectroscopy and electron microscopy. Also, the principles and applications of computational structure determination (protein modeling) will be discussed.

Additional Information Teaching Methods

Lectures (classical), Lectures (online video's (flipped)), plenum discussions, assignments, self-study.

Method of Assessment

Written exam (80% of the final grade) and video assignment (20% of the final grade).

Literature

Branden, C., and Tooze, J., Introduction to Protein Structure, Garland, 1999.

Additional Information Target Audience

3F,3S, mi-AMPS

Additional Information

For PyMOL exercieses install PyMOL Educational Version (limited to the use within this course!) and bring a three button computer mouse as a touchpad will not be sufficient.

Explanation Canvas

Lecture material as well as additional material will be published in
CANVAS.

Recommended background knowledge

Project Cancer (MNW), Biochemistry Course (S/F/MNW).