[C3.4]	Structural Bioinformatics	Compulsory elective module in the core area C3	3 CP (total) = 90 h		2 SWS
			Contact hours 2 SWS / 30 h	Independent study 60 h	

Content

The module gives an introduction to Python programming and two central methods of structural bioinformatics, molecular dynamics simulation and the prediction and modeling of protein structures. The exercises impart practical experience on the computer with programming in Python for applications in biochemistry.

Lecture & Tutorial:

Programming for biochemists: The first part of the course teaches the basics of a programming language, Python. The participants write various small and useful programs and develop a general understanding of programming methods.

Structural bioinformatics: The second part of the course introduces the participants to get to the techniques of molecular dynamics simulation, structure modeling and structure prediction.

Learning outcomes and skills

The aim of the course is to understand and assess the possibilities and limits of these computational methods and to be able to use the Python programming language for tasks in biochemistry.

Admissions requirements/Conditions for participation in the module/courses

None

Recommended prior knowledge

None

Organizational details

The course takes place as a block course during the semester.

Module allocation (degree programme/faculty)	Master Biochemistry / FB14
Module transferrable to other degree programmes	
Module offered	summer semester
Duration	1 semester
Module coordinator	Prof. Güntert
Course requirements for credits	
Participation record	Tutorial: Regular and active participation, processing of exercises
Coursework	None
Forms of teaching / learning	lecture, tutorial
Language teaching and instruction	English
Module assessment	**Form / duration / content, if applicable**
Final module assessment	Written exam (90 min.)
Cumulative module assessment consisting of	
Composition of the module grade for cumulative module assessment	

	Mode of teaching / study	Semester hours per week	Semester CP			
			1	2	3	4
Programming for biochemists & Structural bioinformatics	L+T	2		3		
TOTAL		2		3		