Biophysical Chemistry

Title	Biophysical Chemistry	
Semester	F2023	
Master programme in	Chemical Biology / Molecular Health Science / Physics and Scientific Modelling	
Type of activity	Course	
Teaching language	English	
Study regulation	Read about the Master Programme and find the Study Regulations at $\frac{ruc.dk}{ruc.dk}$	
Læs mere om uddannelsen og find din studieordning på <u>ruc.dk</u>		
REGISTRATION AN	ID STUDY ADMINISTRATIVE	
Registration	Sign up for study activities at <u>stads selvbetjening</u> within the announced registration period, as you can see on the <u>Studyadministration</u> <u>homepage</u> .	
	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	The Master Programme/Institute reserves the right to cancel the course it fewer than 8 studentes are registered for the course.	
ECTS	5	
Responsible for the activity	Jeppe Kari (j <u>kari@ruc.dk)</u> Anders Malmendal (<u>amalm@ruc.dk</u>)	
Head of study	Studieleder for Fysik (<u>fys-sl@ruc.dk</u>)	
Teachers		
Study administration	INM Registration & Exams (<u>inm-exams@ruc.dk</u>)	
Exam code(s)	U60049	

ACADEMIC CONTENT

Overall objective	The aim of this course is to give the student molecular-level understanding of the structure, stability, interactions and dynamics of proteins—basically "Why do proteins behave like they do and how can we interfere with it?". The course will also introduce the principal methods used in modern protein science and provide practical experience in using some of these.		
Detailed description of content	During the course there will be a series of lectures describing how and why macromolecules interact with themselves and other molecules. In parallel with this there will be a number of experimental sessions where we will use different types of biophysical characterisation and analyse the results. Groups of students will write reports based on experiments carried out		
	during the course.		
Course material and Reading list	Pensum in this course are lecture notes and articles provided during the course.		
Overall plan and expected work effort	 Lectures: 21 hours Preparation: 28 hours Experimental sessions: 21 hours Experimental evaluation and report writing: 40 hours Exam: 25 hours Total for this 5 ECTS course is 135 hours		
Format			
Fueluetica			
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 form the course to the study board during or after the course.		
Programme	During the course there will be a series of lectures describing how and why macromolecules interact with themselves and other molecules.		
	In parallel with this there will be a number of experimental sessions where we will use different types of biophysical characterisation and analyse the results. Groups of students will write reports based on experiments carried out during the course.		
ASSESSMENT			
Overall	After completing the course the student will be able to:		
learning outcomes	 account for the principal physico-chemical properties of proteins, such as structure, stability, interactions and dynamics 		

	 and accounting for these properties in terms of molecular-level theroetical models interpret experimental results from physico-chemical studies of proteins apply physico-chemical concepts and models to solve problems involving proteins carry out spectroscopic measurements on proteins critically assess research literature in protein science, and effectively communicate with researchers in protein science. 		
Form of examination	Group portfolio and oral exam.		
	Permitted group size: 2-3 students. Examples of written products are exercise responses, talking points for presentations, written feedback, reflections, written assignments. The preparation of the products may be subject to time limits.		
	The character limit of the portfolio is: For 2 students: 12,000-36,000 characters, including spaces. For 3 students: 12,000-36,000 characters, including spaces. The character limits include the cover, table of contents, bibliography, figures and other illustrations, but exclude any appendices.		
	Time allowed for exam including time used for assessment is for: 2 students: 45 minutes. 3 students: 60 minutes.		
	The assessment is individual and based on the student's individual performance. The assessment is an overall assessment of the written product(s) and the subsequent oral examination		
	Permitted support and preparation materials at the oral exam: Personal notes, own reports and assignments.		
	Assessment: Pass/Fail. Moderation: Internal co-assessor.		
Form of Re- examination	Samme som ordinær eksamen / same form as ordinary exam		
Type of examination in special cases			
Examination and assessment criteria	Groups of students will write reports based on experiments carried out during the course. The oral group exam will start with a presentation of the results described in the report.		
	The assessment criteria regarding the written part:		
	 Account for the principal physico-chemical properties of proteins, such as structure, stability, interactions and dynamics and accounting for these properties in terms of molecular-level theroetical models. Interpret experimental results from spectroscopic and other physico-chemical studies of proteins. Apply physico-chemical concepts and models to solve problems involving proteins. 		

	The assessment of the oral exam is based on the student's ability to meet the criteria mentioned above and their ability to:	
	 clearly present and communicate the scientific content of the reports engage in a scientific dialoged and discussion with the assessors Furthermore, whether the performance meets all formal requirements 	
	The character limit of the portfolio is:	
	 For 2 students: 12,000-36,000 characters, including spaces. For 3 students: 12,000-36,000 characters, including spaces. The character limits include the cover, table of contents, bibliography, figures and other illustrations, but exclude any appendices. 	
	The assessment is an overall assessment	
Exam code(s)	Exam code(s) : U60049	

Course days:

Hold: 1

Biophysical Chemistry (CB)

time	14-02-2023 12:15 til 14-02-2023 16:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	16-02-2023 12:15 til 16-02-2023 14:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)

Teacher

Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	21-02-2023 12:15 til 21-02-2023 16:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	23-02-2023 12:15 til 23-02-2023 14:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	28-02-2023 12:15 til 28-02-2023 16:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	02-03-2023 12:15 til 02-03-2023 14:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)

Teacher

Biophysical Chemistry (CB)

time	07-03-2023 12:15 til 07-03-2023 16:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Anders Malmendal (amalm@ruc.dk) Jeppe Kari (jkari@ruc.dk)

Biophysical Chemistry (CB)

time	09-03-2023 12:15 til 09-03-2023 14:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	14-03-2023 12:15 til 14-03-2023 16:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	16-03-2023 12:15 til 16-03-2023 14:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt

location

12.2-079 - teori 12.2 (15)

Teacher

Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	21-03-2023 12:15 til 21-03-2023 16:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	23-03-2023 12:15 til 23-03-2023 14:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time	28-03-2023 12:15 til 28-03-2023 16:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry (CB)

time

30-03-2023 12:15 til 30-03-2023 14:00

forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
location	12.2-079 - teori 12.2 (15)
Teacher	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry - Hand-in of portfolio (CB)

time 20-04-2023 10:00 til 20-04-2023 10:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

Biophysical Chemistry - Exam (CB)

time	25-04-2023 08:15 til 25-04-2023 16:00
forberedelsesnorm	ikke valgt
forberedelsesnorm D-VIP	ikke valgt
Teacher	Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)

Biophysical Chemistry - Hand-in of portfolio (reexam) (CB)

time 30-06-2023 10:00 til 30-06-2023 10:00

forberedelsesnorm ikke valgt

forberedelsesnorm D-VIP ikke valgt

Biophysical Chemistry - Reexam (CB)

time	14-08-2023 08:15 til
	14-08-2023 16:00

Teacher Jeppe Kari (jkari@ruc.dk) Anders Malmendal (amalm@ruc.dk)